# The Analysis of Scientific Report Writing by Arabic Speaking L2 Writers: Some Aspects of a Systemic Functional Approach, With Proposals for An Interactive Approach to Course Design

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A thesis presented for the degree of

Doctor of Philosophy

University of Edinburgh

1996

## Acknowledgments

Many thanks and much gratitude is due to the institutions and the people without whose help and support this thesis would have not been completed.

I owe a special debt of gratitude to my supervisors Mr. Norman Macleod and Professor Charles Jones. I am deeply grateful to Mr. Macleod for his help, patience, encouragement, support, and accessibility. I am grateful to Professor Jones for his valuable comments and suggestions. Many thanks to Chris Robinson for her valuable comments on the analysis chapter.

Many thanks and much gratitude is due to my University (Jordan University of Science and Technology) and the British Council for their financial support. I am also indebted to Professor Yasir Suleiman for granting me a teaching award in his department of Islamic and Middle Eastern Studies.

I would also like to thank the Ken Mac residents and my friends in Jordan and in Edinburgh for their support and encourgement. I would like to thank Maggie Jo St. John and Barbra Fasholla for their encouragement and moral support.

I owe special thanks to the computer service team for their continuous help. I should not forget to thank my parents, sisters and brothers for their continuous support.

Finally, I must admit that behind the successful completion of this thesis lies the love of three, my husband and my two children whose patience, love, support and ecouragement never stopped. Ziad, Najeeb and Naji—all I can tell you is I love you all very much.

This thesis was produced using the LaTeX document preparation system.

I certify that, unless otherwise stated, all the work described in this thesis is my original work and is of my own composition.

Amal Elnasser

For My Husband Ziad

**Abstract**

This thesis covers three main areas. The first part deals with the nature and depth of various research methods used in exploring ways of learning, assessing and teaching writing in English, and particularly the writing of English as a Foreign Language (EFL).

The second part of this thesis argues for and demonstrates the usefulness of applying approaches derived from systemic functional linguistics to the teaching and assessment of scientific reports written in English by students studying science, medicine, engineering, and for whom English is a foreign language. This is done through the presentation of practical analyses of the recurrent problematic areas shown in the writing of Arab students, and especially students at the Jordan University of Science and Technology (JUST) (from whose work data has been drawn). These problems cover especially the areas of reference, conjunctions, collocation, Theme/Rheme and sentence relations. Possible reformulations of problematic texts are regularly suggested as part of the analysis.

The third part of this thesis presents a description of a course design for the teaching of writing scientific research, supported by examples and various possible methodologies that can offer some help for both learners and teachers of English. The thesis concludes with a summary and suggestions for further research that can be carried forward in further investigations of the teaching of research writing to Arabic-speaking students.

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# Chapter 1

# Background Of The Study: English At Jordan University Of Science And Technology (JUST)

## 1.1 Background of the Study

Jordan University of Science and Technology (JUST) is an applied science university that offers different science subjects, such as medicine, pharmacy, engineering, dentistry, agriculture and nursing. Since almost all the subject matter, and the textbooks, journals, and reference books are in English, English has become and will continue to be the medium of instruction and teaching at JUST. Occasionally, teachers switch into Arabic in order to provide clearer explanations for some technical terms and/or concepts. Still, there are a number of teachers who are non-native speakers of Arabic and so there is a greater demand on the students behalf to develop an acceptable standard of English competence. Furthermore, students at JUST are required to use English in answering exam questions, in delivering seminars and in writing reports for their English course as well as their subject courses.

Recently, postgraduate studies have been established in several departments, such as in Public Health, Engineering and Pharmacy, for which the responsibilities

of the English section to prepare students for writing research papers became even greater. Because the skills of writing a thesis form an integral part of a higher education at JUST, the students concerned need to develop an acceptable level of writing proficiency, for they need it to handle their subject related reports and eventually their thesis if they decide to go for further postgraduate studies. In teaching writing English as a foreign language (EFL), a special kind of orientation and the application of different techniques are needed. It is also important to recognize the different needs, learning strategies and the types of recurrent difficulties in a specific situation.

## 1.2 Rationale behind the Study

As the subject teachers at JUST have nothing to do with teaching students about writing, it became necessary for the English section to take over this responsibility. Since students at JUST are exposed and forced to use English as the medium of communication in classes, exams, and in giving seminars right from the beginning of their university life, it became necessary to help students in achieving an acceptable level of all the necessary skills: reading, listening, speaking, and writing. Right from the beginning of their university life, students at JUST are required to use English in their writing. This is done by taking lecture notes, notes based on textbooks and in answering exam questions.

It was found, based on an analysis conducted by the staff in the English section (1988), that the major concern of subject teachers was the inappropriate standard of their students' writing abilities using English. They believe that their students can not communicate well and that teachers have to reread students' texts more than once in order to make sense of their writing. The main complaints include problems of argument development and in providing coherent texts. The subject teachers expressed their dissatisfaction with the organization of the content of their students' writing. The main concern of the subject teachers was the organization and the logical and coherent progression of their students' writing. Therefore,

there came a need to teach the skills of writing in order to equip students from the beginning with an acceptable level of writing abilities so as to handle their report writing throughout their studies at JUST, and hopefully to give them a solid basis in handling their thesis writing for those who go on to further studies.

The English section at JUST with its limited staff (in number) took the responsibility for designing and implementing university service courses in English. A four-year project with the help of the British Council and the ODA was conducted in order to write up material for JUST science students. The material was collected and modified to meet our objectives in helping students acquire more proficiency in the different skills. This collected material is of a general science nature, but is simplified and altered to adhere to our teaching objectives.

As a result of the above research and analysis of the different needs of the different departments, three major courses for university requirements in English were established. The first course (English 111) focusses on different strategies and techniques of efficient reading and listening, as well as lab report writing. The second course (English 112), on the other hand, emphasises the mechanics and the different stages of report writing. The third course (English 273) is a special course designed for nursing students because it was felt that this group needed more training in the skills concerning writing and oral presentation.

Even with all these English courses, still students feel that their English has not improved and that acquiring various skills through the English courses did not help in using such skills in their subject courses. They often complain that they can not apply the different strategies and techniques which they have learned in the English classes to their own subject textbooks. Similarly, subject teachers do not feel that the EAP courses are of any help in improving their students abilities to handle their academic tasks.

This is how I became interested in and concerned about the writing difficulties that JUST students face. I have been concerned with designing a writing syllabus and in developing a methodology which will enable both staff and students to develop a clearer understanding of the processes that are at work when students

are writing in an academic environment. Therefore, helping students in handling their reports writing is the main concern of this work.

## 1.3 Data Collection

The data was collected mainly from first and second year students, from all departments, who are taking English 111, English 112 and English 273 mentioned above. Thus, the sample covers all departments/faculties at JUST. Two types of data were collected. The first kind is in the form of a test that was designed with the supervision and the co-operation of the supervisor, following some examination of instances of actual writing. The test comprised different questions that test different linguistic abilities. Questions on number agreement, sentencing, paragraphing, collocation, tenses, relative clauses, articles and cohesion were included in this test. The test was conducted by different teachers with me present in order to explain to students how to go about it and to make clear to them the importance of this exam to my research. Thus, students were aware of the importance of this data and its vital contribution to the development of writing. The total number of exam papers collected was 120. The importance of this kind of data is that it will help in revealing students' problems in certain linguistic areas.

The second type of data, which is my main concern here, consists of reports written by JUST students as a requisite for their English classes (112, 273). This type of data is produced by students who are somehow more relaxed because the reports are usually written throughout the term in and outside the classroom; about 150 reports were collected. The two types of data were collected to ensure the recurrence of certain problems in both types of data. The latter data will be analyzed and evaluated and regularly possible reformulations will be provided in terms of a functional conception of text organization.

The decision to take the main sample from first year students (second term) and second year students (first term), was based on the assumption that students are by these stages familiar with how to answer exam questions. Also, a wide

range of possibilities can be expected to show up, which might give consistent and similar difficulties in writing. Finding and dealing with these difficulties might help in improving students writing and in aiding them in carrying out report writing (and eventually thesis writing) in an acceptable way.

Furthermore, as JUST is a science university in which the medium of instructions and teaching is mainly English, there is a great demand on students right from the beginning of their first year to read, listen and write with a good level of English proficiency. Therefore, choosing the writing of first and second year students as my data is important in order to try and help students right from the beginning by equipping them throughout their academic life at the university to become more efficient as well as more autonomous writers. Studying and understanding students' problems in writing in English should enable us to establish a course that is geared towards overcoming their weaknesses and emphasising the right rhetorical patterns that are acceptable in their subject departments.

## 1.4 Significance and Purpose of the Study

The significance of the study rests mainly on the need at JUST to teach report/thesis writing. This study aims to contribute towards developing and enhancing students awareness of the textual, rhetorical, and lexicogrammatical aspects involved in report writing.

The main purpose of the study is to examine and classify writing weaknesses at report writing level as manifested in texts written in English for academic purposes by JUST students. The approach taken will draw on aspects and areas and extensions of functional systemic approaches to language analysis. Furthermore, evaluations and reformulations of such texts are presented which will help in shedding more light on the students' actual problems and the possible causes behind such problems (as will be presented in chapter four).

The study aims to design a syllabus for teaching report writing illuminated by the findings of the investigations mentioned above and their pedagogical im-

plications. The findings of the study should help in deciding on the input of the material that is going to be suggested for the teaching of writing which will be presented in chapter five. The decision about using either texts of a general scientific nature or subject specific texts or eclectic material will be reached after having done the analysis in chapter four. The designed syllabus will be proposed to be used for teaching report writing for undergraduate students at JUST and will be the basis for developing a special course for teaching thesis writing for postgraduate students in the departments of Pharmacy, Engineering, and Public Health.

Another important feature of this study is that it is distinct from previous studies in that it draws on an evaluative systemic functional assessment of scientific texts written by Arab students and in providing suggestions for modification and amendments. The discourse analysis in chapter four will help in identifying and exploring field-specific academic writing conventions and will reflect on how students respond to scientific conventions. The analysis, which is carried out in chapter four, has not, as far as I know, been tried on writings done by Arab students. This kind of analysis reveals students' problems more clearly and at the same time offers suggestions for evaluation which are not simply based on a scoring scale level of analysis as was done by Hamdan [1].

Furthermore, most of the approaches of previous research, which have dealt with the same problem, have confined themselves to error analysis in relation to grammar and lexis and the relation of these errors to mother tongue interference. Previous research includes works by Mukattash [2], [3], Alawni [4], Manasrah [5], Khatatbi [6], Oweis [7], Mustafa [8], Kharma and Hajjaj [9].

Although Hamdan's [1] investigation was done on longer texts, the fact that he used a scoring scale approach in his analysis proved not to be very helpful in offering the right evaluation and did not reflect how students fall into making mistakes in their writing as the evaluative functional analysis carried out in chapter four does. I believe that spotting problems and weaknesses of students' writing is one part of the solution, providing an evaluation and reformulation of such micro

and macro problems are considered as the other half of the solution, as the analysis in chapter four will try to achieve.

Consequently, this research tries to establish, first of all, the different problems exhibited by student's writing scientific English and then tries to explore the seriousness of these problems. An emphasis will be given to the systematic recurrence of such problems in all texts that are under investigation. Such problems will be considered by looking at each text as a whole and not as a text that is comprised only of chunks of connected sentences as most of the previous approaches did. Each text will be looked at as a *gestalt* (that is, a perceived organised whole) where all the interpersonal, ideational, and the textual aspects of discourse should work together in an integrated way in constructing a text.

Having studied the written reports done by JUST students, it was found that the main items which need closer analysis are: reference, conjunctions, collocation, Theme/Rheme, and sentence relations. Although, I set off trying to analyse various texts focusing each time on one of these items, the analysis each time could not work unless such texts were treated as *gestalts*. Such items could not be altered or reformulated without considering the text as a whole, for it never worked out to take such items separately. This analysis will be shown and exemplified in chapter four. It was found that during the analysis of each of the above items, other problems had to be taken into consideration as well. During the analysis other problems came to the surface besides those mentioned above. Such problems have not been given much emphasis for I thought that they are not that serious and do not deter reading intelligibility. Examples of such problems are prepositions and prepositional phrases.

Because the main aim of this study is to analyze scientific written texts in terms of looking at them as an integrated whole of interpersonal, ideational and textual factors, as well as trying to reformulate such texts, no statistical analysis was needed. The focus is on qualities that are typical rather than simply on instances whose frequency can be measured. The texts that are presented in chapter four reflect a systematic recurrence of the various difficulties mentioned above. Such analysis according to Coulthard [10], helps better understand the real

problems behind students' writing for such analysis digs up the writer's intentions and difficulties encountered in achieving such intentions.

This proposed analysis is intended to provide more understanding for both teachers and learners about the actual, complex, and multifunctional processes involved in writing. It will help teachers, for it will shed some light on how to evaluate students' writing, and help their students in understanding their problems as well as in developing their writing skills in order to become more autonomous writers. Consequently, this evaluation will be more positive in enhancing students' awareness of their own problems and hopefully in overcoming them.

The following chapter, chapter two, will review literature considering both skills of writing and speaking, because an understanding of the differences between these two skills might be helpful in a better understanding of the processes involved in the skill of writing. It also outlines the two approaches used in analysing discourse. Both of these approaches — the communicative approach and the traditional approach — are discussed and a suggestion for combining both as being the appropriate way in a teaching environment especially in EFL/EAP (English as a Foreign Language/ English for Academic Purposes) classes is proposed.

This chapter is followed by a chapter discussing different methods that are used in analyzing written texts. The discussion of these methods will shed some light on the importance of cohesion and coherence in constructing texts, and therefore should be useful for my analysis chapter. It also demonstrates the importance of evaluative analysis as well as genre analysis, especially for the teaching of English as a foreign language to science students.

This chapter is followed by chapter four which deals with an evaluative functional analysis of scientific texts written by JUST students focusing on some typical problematic areas, such as reference, conjunctions, collocation, Theme/Rheme, and sentence relations. The analysis also takes into consideration the conventions of scientific discourse. This chapter also presents an illustrative analysis of one text written by a native speaker of English (and also a student of science and engineering) to emphasise the fact that the skill of writing is a problematic area for all writers — native speakers and non-native speakers of English alike. Then,

chapter five presents a detailed course design for the teaching of scientific writing for undergraduate science students. This course will be proposed to be taught at JUST as a modification/replacement of the present course in order to equip students with the right attitude and some of the skills needed for writing their reports. Finally, a chapter devoted to discussing the results and the pedagogical implications of the study as well as proposing suggestions for further research is presented.

# Chapter 2

# Literature Review

## 2.1 Introduction

### 2.1.1 Aims of Study

A useful approach that can help Arab students at the tertiary level in writing in English is to reveal the reasons behind their mistakes and the causes of difficulty in writing English as a foreign language. Kharma [11], p.7 believes that " Here we have to deal with discourse, where the differences between the rhetorical principles underlying it and the devices and techniques employed in Arabic and English play an important role in creating the problem". But, before examining these causes of the problems which emanate from writing English as a foreign language, I believe that it would be valuable first of all to review what has been written so far on the skill of writing and the contexts of its efficiency. Although, in teaching circumstances, it is very difficult to separate the skills of writing, speaking, reading and listening (for they are integrated), my main concern in this review will be focussed on discussing the contextual effects of both writing and speaking, as awareness of the differences between them might help in developing L2 writing skills.

### 2.1.2 Brief Outline of Discourse Analysis (Speaking and Writing)

A brief outline of the development of discourse analysis (the study of language in context or the study of language in use) must be dealt with at the outset. The primary works which nurtured the study of discourse analysis were developed by two philosophers, Austin [12] and Searle [13], by providing means to explore the communicative use of language. Their works show the distinction between the meaning and force of an utterance or expression. Schiffrin [14],p.6 believes that

> They developed speech act theory from the basic insight that language is used not just to describe the world, but to perform a range of other actions that can be indicated in the performance of the utterance itself.

This approach from philosophy concentrates on the underlying knowledge of conditions for producing and interpreting acts performed through words. This can be clearly shown in the following examples from Schiffrin [14],p.6.

a. I promise to be there tomorrow.

This example performs the act of promising, whereas the following example performs the act of asserting:

b. The grass is green.

According to Austin [12] (a) is a performative, an utterance that actually performs an act and does not describe it — because it explicitly involves the verb *promise* in the simple present tense, first person. By contrast, (b) is for Austin constative — it describes a state of affairs that exists independently of the utterance. Austin distinguished (a) and (b) as *performative* and *constative* utterances respectively.

Austin first distinguished between performative and constative utterances, a distinction which he developed later into the notion of speech act and the related concepts of locutionary, illocutionary and perlocutionary acts. The central idea is the difference shown between referential meaning and illocutionary force. Austin's [12] classical example is the utterance "Shoot her!" where by "shoot" the speaker meant "shoot" and by "her" referred to "her". This would be the referential meaning. But the utterance "Shoot her!" would also function as an order, and this would be the illocutionary force of the utterance. The notion of speech act theory was then carried forward by Searle. He introduced the analysis of indirect speech acts which shows that in saying something, one can entail saying it with a special illocutionary force. An example from Schiffrin [14], p.6 shows these kinds of utterances:

Can you pass the salt.

Here, the words perform more than one action at a time, being simultaneously a question and a request. Thus, in this example the illocutionary force is the product of the relationship between the direct speech act of question and the indirect one of request. In situations like this, contexts might be of great help in distinguishing the different functions of utterances in a discourse.

Similarly, the interactional sociolinguistic approach which derives from the fields of anthropology, sociology and linguistics, is concerned with culture, society and language. On the basis of observing people communicating in natural settings, Gumperz concentrates on how people from various cultures may share grammatical knowledge and how the different interpretations/messages that can arise may be due to the different contexts in which language takes place. Like Gumperz, Goffman and his followers concentrate on the position of language in social life, its different meanings and the structures it adds to those situations. Thus, it is clear that [14], p.8 "the interactional approach relies upon actual utterances in social context: the focus of analysis is how interpretation and interaction are based upon the interrelationship of social and linguistic meanings".

A related approach has come to be known as the ethnography of communication. Dell Hymes [15] believes, as cited by Schiffrin [14],p.8 that the emphasis should be on the communicative competence which "includes knowledge of how to engage in everyday conversation as well as other culturally constructed speech events (e.g. prayer, public oratory)". This approach combines all the fields of social, psychological, cultural and linguistic knowledge. Thus, cultural conceptions of communication are restricted to the conceptions of individuals, cultural values and the knowledge of the world around us. Communication, according to this approach, is culturally bound.

An important emphasis in the study of discourse and its analysis also comes from the work of the philosopher H.P.Grice [16]. Grice provides us with general maxims of cooperation and the notion of conversational implicature where the meaning of utterances might be different from their literal meaning. He avers that these maxims provide inferential cues in order to interpret the speaker's intentions. Schiffrin [14],p.9 asserts that Gricean pragmatics proposes that "human beings work with very minimal assumptions about one another and their conduct, and that they use those assumptions as the basis from which to draw highly specific inferences about one another's intended meanings". Schiffrin [14], p.9 uses Grice's example to explain this relation:

a. Smith doesn't seem to have a girlfriend these days.
b. He has been paying a lot of visits to New York.

It can be seen from this example that there is hardly any connection between (a's) utterance and (b')s utterance — only that they are both about Smith . This lack of connection, Grice believes, does not prevent us from interpreting (b's) words as being cooperative. What the hearer usually does, Schiffrin [14], p.9 believes is "supplement the literal meaning of utterances with an assumption of human rationality and cooperation" which allows (b) to deduce that (a) has implicated that Smith has a girlfriend in New York. In this way (b) follows the maxim of relation. This process of interpretation has led to the development of an inferential rather than a coding view in the creation of meaning.

H. Sacks, E. Schegloff and G. Jefferson [17] are considered to be the leaders of the conversational analysis approach which stems from discovering the methods by which people realize social order. It is like interactional sociolinguistics in its concern with social order and with the effects of social contexts on the creation of language. Unlike the variationist who studies texts as finished products, conversational analysts such as Sinclair and Coulthard, according to Cook [18], p.52 "view discourse as a developing process, rather than a finished product".

A variationist approach, which derives its status from linguistic variation and change, was originally formulated by Labov [19], [20], [21]. This approach asserts that the heterogeneity of linguistics can be detected through systematic consideration of a speech community. Semantic function and text are the main concern of the variationist approach. The importance of this approach to discourse is the discovery of formal patterns in texts and how these patterns are constrained by the text. Schiffrin [14], p.11 asserts that this approach "utilizes some of the basic tools of linguistic analysis: it segments texts into sections, labels those sections as part of a structure, and assigns functions to those sections". There is a greater degree of text autonomy in relation to context than in the other previous approaches.

All those developments suggest that it is through discourse analysis that one can investigate extended texts of discourse in order to help students improve their skills ( here of course the emphasis will be on the skill of writing), and emphasise the importance of examining long discourses to convey certain messages. The main contribution of these approaches is their emphasis on the *function* of language in settings of communicative use and they show the value of any discourse approach that goes beyond the analysis of mere form and literal meaning.

## 2.2 General Differences Between Writing and Speaking

Besides research done on conversation, there has been considerable research on and innumerable studies of the distinctive linguistic features of the two modes of

writing and speaking. McCarthy [22] believes rightly that the interpretation of both speaking and writing depends on their immediate contexts. Although some researchers argue that speaking is more tied to its context, context dependency can be found in written texts too. McCarthy [22], p.149 mentions an example of a sign saying "No BICYCLES" and argues that this sign is context-dependent. According to McCarthy, this sign may mean either that no bicycles are allowed to be ridden or parked here, or that all bicycles in the shop are already hired or sold out. These two different interpretations depend on the place where the notice is posted.

In chronological terms in all sorts of ways, historically and developmentally, speaking is prior to writing, but nowadays writing in several ways tends to be more important in social, commercial and educational terms and it has social prestige, especially in literate communities. In general, researchers such as Biber [23] claim that writing is a more complex activity and more elaborate than speaking in terms of its structure. This has been measured by such factors as the frequent use of subordinate constructions, prepositional phrases and adjectives.

Researchers also believe that writing is not reciprocal like speaking, but more explicit and autonomous as is shown by such forms as the use of passive, nominalization, noun series etc. Although writing is considered to be interactive (as between writer/reader), some researchers are still convinced that writing is more detached and more deliberately organized. Of course, this kind of generalization is debatable. But it has to be clear that a good deal of the additional deliberate organization of writing arises from the need to allow and facilitate an interactive engagement between writer and reader because their engagement can not be reciprocal. In this reseach, an explanation recognizing the relevance of interactivity to the engagement of writer and reader is going to be very central.

Chafe [24] shows that one of the major differences between the medium of speaking and writing is related to the interaction between the participants and the text. He believes that the writer/reader has enough time to write/read, whereas speaker/listener must produce and comprehend immediately, as soon as the communicative event has been uttered. Sinclair [25] agrees with Chafe that interaction

in conversation occurs in real time. He believes that interaction in writing is somehow imagined by the writer. The writer, he avers, tries to concoct some kind of conversation with an imagined reader which is evident by the use of pronouns such as *you* and *we*. This concept that advocates the importance of having a certain reader in mind while writing will be one of the major points of this research.

On the other hand, Biber [23], p.36 thinks that "there is no linguistic or situational characterization of speech and writing that is true of all spoken and written genres". The interaction between the medium of discourse (Speaking/Writing) and the mode (the choice of features influenced by the purpose of an activity) determines the similarities and the differences between writing and speaking. Public speeches and written exposition, for example, are very similar. Some spoken genres differ from others, such as conversation and speeches. The same thing holds for written genres. Personal letters, for example, are different from academic exposition. Also, it is obvious that speech, unlike writing, is reciprocal and dependent on shared space, time and background knowledge of the participants (i.e. the assumed knowledge of the world arround them and the constitutive knowledge of language). Thus a certain medium and mode can be espoused by the writer/speaker in order to transmit different messages.

Sanford and Garrod [26], p.192 believe that the task of the writer is very much more similar to that of the speaker than is generally assumed and that "the fundamental difference is that [in writing] there is no opportunity for corrective dialogue after the final draft has been produced". Still, they argue that there are two methods which are analogous to dialogues that are used by the writer to correct his discourse. The first one is that the writer can read over what he has written. The second method is that the writer usually has some other persons to read his work. For example, a thesis can be drafted and polished by a student, read afterwards by a supervisor and revised, re-read again and re-revised, many times, before it would be read by an examiner and perhaps further suggestions for correction made. If passed, then it might be sent to a publisher and so might be structurally re-edited etc. This process of writing will be an integral part of chapter five while discussing a course design for research writing.

Cooper and Greenbaum [27], p13 aver that writing takes place in social isolation. Therefore, the writer is "freed from the insistent temporal demands of speaking....freed from keeping [his] audience's immediate attention" and this can be advantageous for the writer. The writer only concocts an imagined reader to help him in the process of writing, and there is no immediate demands or queries for immediate explanations. Conversely, in speaking there is a rapid pressure on discourse production because language and thought should occur at the same pace. Also the pace of the listener should practically be the same as the speaker's to [27], p.14 "ensure parallel flow of ideas in two conversing minds". The speaker has an advantage over the writer in that he can immediately modify, repeat and correct depending on the listener's reaction.

If we consider, for example, spoken discourse, we can see that it is produced in intonation units with intonation contour and pitch pattern. The hearer takes into consideration the voice quality along with the gestures of the speaker and the movement of the body to interpret the intended message. Such paralinguistic features help to establish or determine the meaning of utterances. Tannen [28], p.6 stresses the fact that "the intonation contour serves as a cohesive device; it signals information that is left implicit, which must be understood to make a coherent whole of the verbal message". The same utterance, however, might have different meanings if accompanied each time with different paralinguistic features. Studies have proved that people tend to use prosody in speaking in order to predict what will follow in extended discourse.

Gumperz, Kaltman and O'Conor [29], pp.3-4 aver that "in spoken language, much semantic and pragmatic information concerning what the talk is about, and how it is to be chunked, is signalled through prosody, physical contexts, gestures, paralinguistic cues, etc.". If we consider the following example which is said in a rising falling tone:

Am I late?↗ I didn't mean to be?↘

Here, these two sentences are considered coherent in two ways: firstly, by ellipsis (I didn't mean to be late), secondly, by conjunction "but" which is being ex-

pressed by the rising falling tone. Thus, in speaking, coherence can be achieved by prosody which helps in revealing the implicit meanings that are important in the understanding process of discourse.

Such features are not available in writing, although we may argue that in writing one can use different resources other than the grammatical ones such as: punctuation, capitalization, italicization, paragraphing, bold face, underlining and other editorial additions which can serve a similar function as the paralinguistic features in spoken discourse. The trouble is that one must not use these too much, or his/her text could begin to look very odd indeed. It can also be said that in writing, [27], p.19 "punctuation provides a basis for segmenting written language into units that are much like the intonation units of speech".

Tannen [28], p.8 presumes that "segmenting is one half of the process; the other is the making of ties across message chunks". These cohesive links act as sign posts which enable the reader to anticipate and predict what will follow. It will be evident in chapter four and through the analysis of students' writing that segmentation and the use of cohesive devices are two of the problematic areas facing students at Jordan University of Science and Technology. Gumperz, Kaltman and O'Conor believe that in writing, the writer must search for syntactic and lexical means to define relationships of reference, semantics, and to give discourse its thematic cohesion.

Researchers such as Chafe [24] have found out that writing surpasses speaking in its use of longer and more complex punctuation units (compared with intonation units of speaking), a factor which is connected with the use of prepositional phrases, attributive adjectives, nominalizations, conjoining and clause embedding. Similarly, Halliday [30], p.62 holds that one of the differences between writing and speaking is a difference in lexical density, "the density with which the information is presented. Relative to each other, written language is dense, spoken language is sparse".

Halliday considers the density of lexical words over the grammatical words to be important. Grammatical words are the items that belong to a closed system in the language such as articles, determiners, pronouns, conjuncts and some finite

verbs. In other words, they are words which fall into systems which are closed and which one can not add other words to. By contrast, content words belong to open systems to which one can add many words. An example of a spoken discourse which shows less density than writing is given by Halliday [30], p.61:

> The only real accident that I've ever had was in fog and ice.

This example shows that there are ten grammatical words (i.e. the function words: the, only, that, I, have, ever, had, was, in, and) and only four lexical words (i.e. the content words: real, accident, fog, ice) in this spoken utterance. Written discourse shows the opposite tendency. An example of written text is [30], p.61:

> The Trust has offered advice to local government authorities on cemetery conversation.

It is clear here that the proportions of grammatical words to lexical words are reversed. There are only four grammatical words in this example (the, has, to, on ) and eight lexical words (trust, offered, advice, local, government, authorities, cemetery, conversation). This sentence shows a higher ratio of lexical items. It is clear then that lexical items are more densely present in writing.

Another constraint on speaking is that the subjects of clauses usually express given information. Such information is usually pronominalized and weakly stressed. Writers, on the other hand, have the freedom to violate this order of information which is called by Chafe [24] the "light subject constraint". Similarly, McCarthy [22] considers that it is the writer who makes the choice in presenting the information.

The position of certain pieces of information in the clause shows their function. For example, if an item is brought to the front of the clause, it would be as a signal of what is to be understood as a framework for what the speaker/writer wants to say. The rest of the clause is seen as transmitting what he wants to say within that framework. The item that is positioned at the beginning of the clause is called Theme or topic of the clause. The Theme of the clause affects the whole meaning;

its importance equals the importance of those sentences in paragraphs which tell us what a whole paragraph is about. This concept of Theme will be discussed in more detail in chapter four for its vital role in steering the information presented towards a more communicative level. This differentiation between speaking and writing is going to be central while analyzing students' writing for the spoken pattern seems to prevail over the written pattern in many occasions.

## 2.3 Approaches To the Interpretation of Language (Speaking and Writing)

Having presented a brief outline of the history of discourse analysis particularly as focused on speaking and writing, and having looked at general differences between these two modes, let us now consider two different but complementary approaches that can be used to examine the different modes of language (written/spoken). The study of these approaches will shed some light on the different methods used in the learning and teaching of research writing which will be essential in presenting a course for the teaching of writing.

The first approach, the traditional one, that has been used generally as the main method in the teaching process, is the formal approach. This approach is mainly concerned with the grammatical rules that govern the structure of words and sentences. It sees language as autonomous and decontextualised. The other approach, which started to prove its importance in the process of interpreting the function of discourse, is called the contextual approach. This approach considers the settings surrounding the text in order to interpret the interactive messages. It embraces the world and the pre-existing knowledge in our minds. It mainly considers meaning, reference and implications as being vital in interpreting the communicative discourse.

So, unlike the pure grammarian, whose main concern in interpreting a discourse is to examine the rules which formulate the language by looking at the grammatical relations between sentences, the discourse analyst is more interested in looking

beyond the actual discourse in order to interpret it more comprehensively. For the discourse analyst, the formal links within and across sentences are not enough. The discourse analyst uses written texts or tape recordings as the basis for his data in order to have a pragmatic approach to the study of language in use.

The grammarian, on the other hand, uses the sentence or a string of sentences to probe the different rules which formulate or specify these sentences. In other words, he studies the words on the page and usually as isolated sentences. While the grammarian considers the rules of grammar to be the absolute truth which can not be altered, the discourse analyst discusses regularities which depend on the occurrence of a linguistic feature taking place in a particular time, environment or condition. The discourse analyst is concerned with the way the receiver comprehends the sender's intended message in a particular situation. Therefore, he is interested in looking at the relationship between the speaker/writer and the utterances/words on the particular occasion of use. As Cook [18], p.24 remarks,

> one way of doing this [discovering the intended message] is to look behind the literal, formal meaning of what is said or written, and to consider what the sender of a message intends to achieve with it, to try to understand its function. People are interpreting other people's language and expecting other people to interpret their own in this way all the time, apparently with a surprising degree of accuracy.

Having briefly reviewed the two methods used in interpreting language (writing and speaking), the following section will concentrate on the communicative method to show its considerable importance in the process of interpretation. Thus, the focal point of this chapter from now on will be on the discussion of the major contextual factors that influence the interpretation of discourse (writing/speaking). Here two essential factors will be considered: the communicative function and socio-cultural knowledge.

## 2.4 The Communicative Approach

### 2.4.1 The Communicative Function

Two important terms for the process of interpretation of text and/or discourse should be identified at the outset for their important role in understanding written texts that will be examined in chapter four: cohesion and coherence. Cook [18], p.127 asserts that cohesion "has often been neglected in language teaching, where sentences have been created, manipulated, and assessed in isolation". Halliday and Hasan [31] consider that the main factor which shows if a set of sentences constitute a text arises from cohesive relationships within and between sentences which in turn give the text its texture. Cohesive relationships in the text can be manifested by looking at the relation between elements of discourse which help in interpreting the text. These cohesive markers , McCarthy [22], p.26 believes, are "clues or signals as to how the text should be read". These markers help the text to be structured as a semantic edifice. In their book *Language and Situation*, Gregory and Carroll [32], p.89 assert that:

> Cohesion is present when the interpretation of an element in the text presupposes something other than itself and that something is also explicitly realized in the text. Then the two elements, the presupposing and the presupposed, form part of the same text, and constitute a cohesive 'tie'.

There are two types of cohesive links: grammatical (such as reference or co-reference, ellipsis/substitution and conjunction) or lexical (such as repetition, hyponymy) which is established by collocation (i.e. the tendency of lexical items to cluster together). Grammatical terms of reference, such as pronouns, demonstratives, and the article *the*, help the reader to interpret the text by retrieving information from previous text or from the text ahead. These references are of two general types: exophoric (i.e. situational) and endophoric (i.e. textual).

Endophoric references are of three types: the main two are anaphoric reference which harks back to preceding text and cataphoric reference which refers to following text. There is a third type, homophoric reference, which does not depend on a specific situation. Here the reference is the whole class such as *the boy*. It does not involve reference or relationship forward or back. Both endophoric and exophoric references indicate a need to retrieve from elsewhere in the text or the situation the information necessary for interpreting the text in question at this point. The relation of these references can be clearly seen in the following examples:

1. exophora: look at that. that=man, someone observable.
2. endophora:
   a. anaphoric: look at the man. He is drowning (he refers back to the man).
   b. cataphoric: He is drowning, the man (he refers forward to the man).

Exophoric references are usually used when endophoric references are not enough or in certain types of text, and are clearly much more acceptable in spoken rather than written usages. These references are helpful because they direct us to the immediate context. Hoey [33] believes that although adjacent sentences are usually linked by anaphoric devices of different kinds and by repetition, these are not enough to account for the organization of discourses. It is believed that such references are bound in terms of shared knowledge between the two interlocutors.

Ellipsis and substitution are other means of creating textual cohesion. Ellipsis is the omission of elements which the writer/speaker assumes are clear from context, which is why the writer leaves them unsaid. Usually such missed items are understood and therefore left out. Halliday and Hasan [31], p.143 believe that "an elliptical item is one which...leaves specific structural slots to be filled from elsewhere". That is why they regard ellipsis as substitution by zero for there is no place marker for what is presupposed. The following example from Halliday and Hasan [31], p.143 demonstrates this concept of ellipsis.

Joan brought some carnations and Catherine some sweet peas.

Here, the predicator can be supplied from the preceding clause. So the second clause can be understood as Catherine *brought* some sweet peas. There are three different types of ellipsis: nominal, verbal and clausal.

Nominal ellipsis [31], p.148 "involve the upgrading of a word functioning as Deictic (determiner), Numerative (Numeral), Epithet(adjective) or Classifier (noun) from the status of Modifier to the status of Head". An example taken from Halliday and Hassan [31], p.148 shows this kind of upgrading.

Four other Oysters followed them, and yet another four.

Here, in this example the word "four" in the second clause which is a Numerative is being upgraded to act as Head.

As for the verbal ellipsis, it occurs within the verbal group. An example of this kind of ellipsis is illustrated in the following example, again from Halliday and Hasan [31], p.167.

a. Have you been swimming?-Yes, I have.
b. What have you been doing?-Swimming.

Here, the two verb groups in the answers of both (a) and (b), *have* and *swimming* are considered as verbal ellipsis. In (a) *have* stands for *have been swimming.* Whereas in (b), *swimming* stands for *I have been swimming.* The full meaning of the answers in (a) and (b) are recovered by presupposition. It is clear from both examples that there is only one lexical element in the verbal group which is the verb itself as in (b) the verb *swim.* The rest of the verbal group *swim* shows [31], p.167 "systemic selections, choices of an either-or type...which must be made whenever a verbal group is used". Halliday and Hasan [31], p.167 divide the principle systems into:

1. Finiteness: finite or non-finite,
   if finite: indicative or imperative.
   if indicative: modal or non-modal.
2. Polarity: positive or negative, and marked or unmarked.
3. Voice: active or passive.
4. Tense: past or present or future (recursively).

Halliday and Hasan believe that in all verbal groups a selection from the above principles is obligatory. The non-elliptical verbal group of *have been swimming*, for example, expresses all the above selections. This sentence is finite, indicative, non-modal, positive, active, and 'present in past in present'. Usually these selections [31], p.168 "are expressed as a whole by the words that are used and by their arrangement in a particular structure".

In clausal ellipsis, individual clause elements or a whole chunk of clausal components may be omitted, as in McCarthy's [22], p.44 following example.

He said he would take early retirement as soon as he could and he has.

In this example, a whole chunk of clausal components has been omitted. The full statement is "He said he would take early retirement as soon as he could take early retirement and he has taken early retirement as soon as he could take early retirement". The omission here is significant in terms of minimizing unnecessary repetition of certain words. McCarthy believes that the use of ellipsis usually causes problems in trying to find out what structural elements are permissible. Ellipsis, he believes, is not used skilfully even by proficient learners.

In substitution the writer/speaker usually uses such expressions as *do, one, so/not* and *same* to substitute the nominal, verbal or clausal discourse. The purpose of substitution is similar to that of ellipsis. The following example shows that the substitution of the word "coffee" with "one", is first of all retrievable from the first sentence; and that the use of "one" in the second sentence prevents unnecessary repetition.

I offered her a cup of coffee. She said she does not want one.

Conjunctions, on the other hand, presume a textual sequence and indicate a relationship between segments of discourse. They can even be used at the beginning of a discourse and at the beginning of turns to indicate a shift in topic. Therefore, they can be considered as discourse markers in that they can organize and manage quite extended stretches of discourse.

It can be clearly seen that these cohesive devices help in the interpretive process. One can not arrive at the right meaning by just looking at isolated sentences or isolated expressions. Van Dijk [34], p.32 asserts that "studying sentences in isolation may tell us something, but it is also possible that it will mislead us". Hoey [35],p.18 confirms that "a sentence in isolation is interpretable in discourse terms only when placed in its contexts. Interpretation of the clause is hampered unless this contextualisation takes place first".

Besides our knowledge of sentential structure, which enables us to interpret the surface meaning and connectedness of a text, there is another kind of knowledge which helps us in the interpretive process. This knowledge relates to coherence. It is a psychological process of interpretation that relies on the receiver's perception of utterances. Mc Carthy [22], p.26 defines coherence as "the feeling that a text hangs together, that it makes sense". Cohesion is considered as a guide to coherence and coherence is what is created in the reader's mind while reading the text. Brown and Yule [36], p.67 maintain that it is not

> the sequence of sentences which represents 'coherent discourse'. Rather it is the reader, driven by the principles of analogy and local interpretation, who assumes that the [cohesive devices describe] a series of connected events and interprets linguistic cues under that assumption.

For example, advertising for classes is usually done in texts that consist of far-from-explicit fragments, but the reader can understand and make the correct inferences from them. One such advertisement is discussed by Brown and Yule [36], p.223:

> Epistemics Seminar: Thursday 3rd June, 2.00 p.m. Steve Harlow (Department of Linguistics, University of York). 'Welsh and Generalised Phrase Structure Grammar'

Here, the reader knows that Steve Harlow is the person who will give the talk about the topic shown in the quotation marks, and when, where and even perhaps why he will do so.

Although cohesive devices help in the coherence process of understanding the intended message, sometimes there are not any linguistic connections between the elements of discourse and one can still understand the message. What is important here is the reader's/hearer's arrival at the writer's/speaker's intended meaning by looking at the linguistic message, although sometimes it is not that easy. It is also important to have some kind of knowledge about the world in order to grasp the correct meaning. For example, one can say that "We're on our way. The sun has moved". In this example one should know that the sun does not move, but because we are on a train that is moving, the sun appears to be moving. This kind of coherence is established by using knowledge of the world in order to come up with the correct interpretation. So the interpretation of any text depends on what the reader brings to it as well as on what the author provides in it. This awareness of shared knowledge and assumptions between writer and reader is very important in achieving successful communication and will be emphasised later on in chapter five through the discussion of a course for teaching report writing.

According to McCarthy [22], p.27 interpretations of texts "can be seen as a set of procedures and the approach to the analysis of texts that emphasises the mental activities involved in interpretation can be broadly called procedural". Procedural approaches highlight the reader's role in comprehending the text based on his experiences of the world and the way the events are organized in it. Brown [37] confirms the need for teaching this skill to our students. She believes that students should be taught how to use this process of inferring in order to understand unconnected discourse. Learning how to use this process, she believes, can help students to infer when they are confronted with unfamiliar notions in discourse.

Labov [19] believes that we interpret messages as being coherent or not by the social rules and not by the linguistic rules which relate what is said to what is done. Coulthard [38], p.62 uses Labov's following examples which demonstrate that sometimes even when the discourse is grammatically acceptable, it does not cohere or make sense.

1. a: What is your name?
   b: Well, let's say you might have thought you had something from before, but you haven't got it anymore.
   a: I'm going to call you Dean.
2. a: I feel hot today.
   b: No.

In both examples it can be clearly seen that the contributions of (b) break the rules for the production of coherent discourse. Sinclair [25], p.77 says that here it is apparent that "every successive utterance ignores the interactive potential of the previous one, and replaces it with a new one, thus appearing to move onto a higher plane of discourse relative to its predecessor". The above utterences show a dysfuntional interaction since it is taken from schisophrenic conversation. The utterances are correct grammatically but there is no communication between the two at all.

Grice [16] provides us with principles (co-operative) of a very general kind for interpreting all utterances and these too are involved in perceiving coherence. Grice's co-operative principle is based on four maxims which the sender and the receiver have to obey in order to maintain efficient conversation: quality (be true), quantity (be brief), relevance (be relevant) and manner (be clear). Obeying these maxims along with general knowledge of the world, the receiver can understand what is said and comprehend what the sender is intending to say. Brown and Yule [36], p.32 use Grice's example to show this principle:

a. I am out of petrol.

b. There is a garage round the corner.

It can be seen from this example that there is no immediate connection between (a's) and (b's) utterances. Still, one can interpret (b's) words as cooperative. Here, (b) has supplemented the literal meaning of (a's) utterance with an assumption of human rationality and cooperation. This allows (b) to infer that (a) has implicated in his statement a request for a gas station. In order to be able to interpret this simple example, we need to have knowledge of the world. For example, we need to know that garages sell petrol and that round the corner means that it is not far away. We also need to know that (a's) remark is not only a description, but also a request for help. In other words, we can see that this example follows Grice's four maxims. Such implicatures, Brown and Yule [36], p.33 believe, constitute the

> pragmatic aspects of meaning and have certain identifiable characteristics. They are partially derived from the conventional or literal meaning of an utterance, produced in a specific context which is shared by the speaker and the hearer, and depend on a recognition by the speaker and the hearer of the Cooperative Principle and its maxims.

Robin Lakoff [39] provides us with the conversational politeness principle. This principle depends on three maxims: don't impose, give options and be friendly. These two sets of overlapping principles - Grice's and Lakoff's - help people to carry out and to maintain social relationships. Of course, these principles differ from one society to another. For example, the repetition of an offer might be acceptable in some societies, as I know it is in Jordan, but not in others. These processes are used to come up with the correct interpretation of utterances. Brown and Yule [36], p.33 argue that:

> since the discourse analyst, like the hearer, has no direct access to a speaker's intended meaning in producing an utterance, he often has to rely on a process of inference to arrive at an interpretation for utterances or for the connections between utterances.

This argument of trying to figure out what the writer is trying to mean through his/her discourse will be more evident while analyzing students' reports in chapter four.

An example of inferring from context is demonstrated in the following example from Brown and Yule [36], p.25:

It's really cold in here with that window open.

Here, the listener can infer that this sentence is not only informative, but is also a request to close the window. Sometimes the listener/reader takes more time to come up with the right inference. This is done by forming a bridging assumption which takes a longer time than direct inferring. A good example of this is mentioned by Brown and Yule [36], p.34:

a. If it's sunny, it's warm.
b. It's sunny.
c. So, it's warm.

Here the receiver links what has been mentioned in sentence (a) and in sentence (b) to conclude that it is warm because it is sunny. Sometimes we might come up with a wrong inference, so we go on to form other inferences. Brown and Yule [36], p.35 believe that in order to achieve the correct type of reference, we need an inference "based on socio-cultural knowledge". Thus, this type of inference is used to show the relationship between the interacting participants and the different elements in the discourse.

The dual purpose of these principles in human intercourse (to have efficient relationships with each other and to maintain good social relations) is suggested by Brown and Levinson [40] to be universal in their origin. Still, the interpretation of these principles differs from one society to another. What might be polite in certain cultures might not be in others. For example, in Jordan, if a person eats something in the presence of others, (s)he should offer the others some of his/her food, which is part of being polite. On the other hand, in the Western countries,

this is not necessarily done. Another example is the politeness Chinese people show when somebody leaves the room by standing up for them which is not apparent in other societies.

### 2.4.2 General Socio-Cultural Knowledge

As has been mentioned above, this factor includes the knowledge of the world and the background knowledge people possess. In interpreting any discourse, we use our knowledge of the world and our background knowledge and experience. It has been suggested by de Beaugrande [41] that knowledge of the text depends a good deal on knowledge of the world. The interpretation of discourse, in other words, depends mostly on the analogy of the experiences we have had in the past. We need to know about the knowledge of people we interact with. In this section I will go back and discuss performatives for the sake of showing the relationship between coherence and social situations for its vital role in providing more understanding through the process of writing. Later on in chapter four, the analysis will reveal how students at JUST are unaware of the importance of such situations, mainly the scientific one. Austin [12] provides more help in understanding language by introducing speech act theory which was then maintained and developed by Searle [13]. The main concern of these philosophers is with what a particular linguistic act involves as its illocutionary force as a question or a command and what effects could the utterance have. This theory povides us with a means to look beyond and beneath the surface of discourse and to discover the different functions of utterances.

According to the speech act theory, there are utterances that can perform actions by being said. In other words [38], p.11 "the saying of the words constitutes the performing of an action". These are called performatives. An example of such an utterance is given by Cook [18], p.35:

I sentence you to death

It is clear that the speaker here is not describing nor stating what he is doing, but performing the action of sentencing to death. But this type of sentence can only be said to a person who is sentenced to death and it can only be said to him by a judge or an authority. In order for these words to be successfully used, they must be said in certain conditions which are called by Austin the felicity conditions. Cook [18], p.157, believes that these conditions are "the contextual elements which interlocutors must perceive to exist for a speech act to function". So, such utterances need a special situation and a special receiver. Van Dijk [42], p.7 believes that:

> the interaction in which the processing of discourse is embedded is itself part of a social situation. The speech participants may have certain functions or roles; there may be differences in location or setting; and there may be specific rules, conventions, or strategies governing possible interactions in such a situation. One cannot say just anything in any situation: possible actions, hence possible goals and hence possible discourses, are constrained by the various dimensions of the situation.

Performatives can be either explicit or implicit. An example of an explicit performative is:

> I bet you he will pass the exam.

An implicit performative can be shown clearly from Brown and Yule's [36], p.232 example:

> Out

Here, this example indicates dismissal which can be said by a referee to one of the players to perform dismissal. Thus, Brown and Yule [36], p.232 conclude by saying that

> by extension, it became possible to suggest that in uttering any sentence, a speaker could be seen to have performed some act, or to be precise, an illocutionary act.

According to Austin, for these performatives to be successfully used, there are four conditions that must be satisfied: first of all there must be an accepted conventional procedure with certain conventional effects. In other words, certain words should be uttered by certain people and in certain occasions. Of course, these conventions vary from one society to another. For example, no one in England can divorce his wife by saying "I divorce you" three times, but this act is still accepted in Jordan. Van Dijk [42], p.8 asserts that this implies that:

> We will ultimately have to take into account a situational assumption about discourse processing. This may include, as presuppositions, general norms and values, attitudes, and conventions about the participants and the interactions in some situation.

The second condition is that the persons and the occasions should be appropriate. The third and the fourth conditions are that the procedure must be understood by the participants correctly and completely. So, it can be said that successful interpretation as mentioned by Brown and Yule [36], p.61 depends on:

> the hearer's/speaker's ability to utilise his knowledge of the world and his past experience of similar events in interpreting the language which he encounters.

This speech act theory uses different terms for the different levels of intention and interpretation. Locution is the formal and literal meaning of the words. Illocution is the act which is performed in saying these words. Finally, there is the perlocutionary or overall aim of the discourse where the producer affects the receiver in a particular way.

Searle [13] distinguishes between direct and indirect speech acts. He claims that indirect speech acts are the indirect performances of direct illocutionary act by way of performing another. The following example illustrates this idea:

> I can't hear you.

It is clear here that the person not only states a fact, but is requesting the speaker to raise his voice. It is not a straight forward question or order, but is a request to speak louder. The question here is the indirect speech act conveyed by the direct speech act "you are inaudible" (declaration). The direct speech of stating this utterance (the literal sense of I can't hear you) is also performed. Van Dijk [42], p.7 asserts that "It should be clear that the interpretation of a discourse as a specific speech act....is embedded within an interpretation of the whole interaction process taking place between the speech participants". Thus, Cook [18], p.37 believes that speech act theory demonstrates how unconnected utterances can form coherent sequence of discourse by relating "the function of utterances to sets of felicity conditions and the knowledge of participants that these conditions exist".

Of course, during the interpretive process, we try to recognize the meaning of words and to look closely at the structure of the sentence in order to build up a composite meaning for the sentence. This procedure is called bottom-up processing which is done by interpreting the lowest level units. It is the procedure that moves from the most detailed features of discourse to the most general. This process is important to understand what language is and how it works. Simultaneously, we try to hypothesize about the most general units first, that is to move downward to the lower levels. This is called top-down processing or the higher level of interpretation.

As noted by Brown and Yule [36], p.235

> it is the predictive power of top-down processing that enables the human reader to encounter, via his bottom-up processing, ungrammatical or mis-spelt elements in the text and to determine what was the most likely intended message.

The relation of these two procedures is clearly expressed by Cook [18], p. 80 in the following diagram :


Figure 2–1: Bottom-up and Top-down Procedures [18]

In bottom-up procedure, one has to start from the most detailed features of discourse by looking at words and the grammar that controls their connection and then proceed to the more general. In top-down procedure one starts with the general and then moves downwards to the detailed levels. Cook [18], p.83 believes that "communication involves handling everything together, usually at high speed, and that this is what a successful language student must eventually be able to do".

It is clear from the discussion so far that the knowledge which we as humans possess is organised and stored in our minds to be used when needed. Usually, the writer/speaker assumes that his listener/reader can predict information about different described situations. Nystrand [43], p.106 believes that

> The only chance writers have of communicating their meanings is by assuming that potential readers have largely the same knowledge of those facts about the world relevant to their meanings as they themselves do, and that readers will, when faced with a text, use the same interpretive strategies that the writers would.

For example, when talking/writing about a classroom, the speaker/writer does not have to mention the chairs and the blackboard etc, because this type of knowledge is assumed. Such knowledge of places as the classroom, Brown and Yule assert [36], p.236, is stored in our " memory as a single, easily accessible unit, rather

than a scattered collection of individual facts which have to be assembled from different parts of memory each time a [classroom] scene is mentioned".

Different terms are used to refer to this stored knowledge. Frames and scripts are two terms which show how this knowledge is stored in the memory. Other terms are used also such as: scenario, schemata and mental models. Brown and Yule [36], p.238 believe that these

> different terms are best considered as alternative metaphors for the description of how knowledge of the world is organised in human memory, and also how it is activated in the process of discourse understanding.

Van Dijk [44], p.5 believes that understanding "involves not only the processing and interpretation of external data, but also the activation and use of internal cognitive information". Cooper [45], p.105 argues that " writers ... take into account what they know about the world they find themselves in.....What writers know about the world is more or less what every one knows: facts, empirical laws, and various culture-bound conventions.....". Thus, Brown and Yule [36], p.61 maintain that it is important to "generalise over contexts and to determine what characteristics speakers in different contexts share". These quotations from different linguists show us that in order to understand and interpret messages, one needs to use the stored knowledge and information along with the general knowledge of the world and the cultural background.

A diagram that can summarise all the general aspects involved in the interpretive process is provided by Cook [18], p.42:

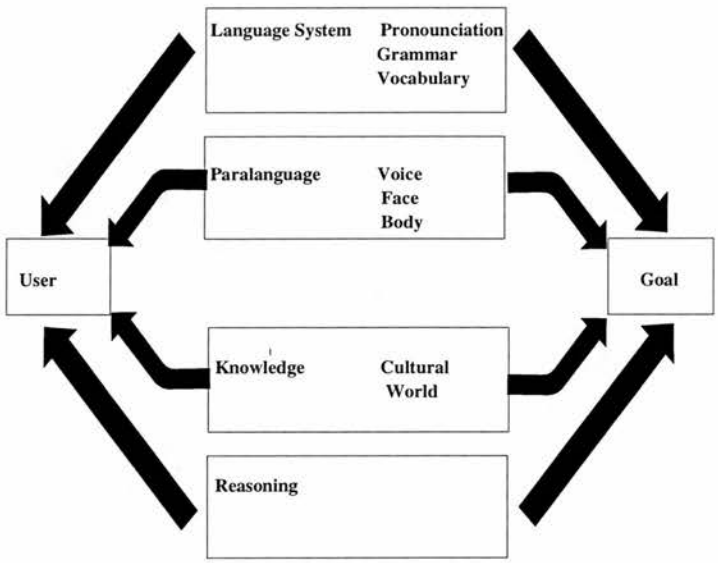


Figure 2–2: Factors involved in the interpretive process [18]

This diagram shows that in order for the language user to achieve the correct interpretation of the received message, he should use the language system along with the paralinguistic features, the knowledge of the world and his cognitive ability. All these factors together will enable the receiver to come up with the right reasoning and to correctly comprehend the intended message. According to Van Dijk [34], p.10, in this process one does not depend only on

> textual characteristics, but also on characteristics of the language user, such as his or her goals or world knowledge. This may mean that a reader of a text will try to reconstruct not only the intended meaning of the text-as signalled by the writer in various ways in the text or context-but also a meaning that is most relevant to his or her own interests and goals.

It can be clearly seen from the above discussion that the formal approach to interpreting the meaning of language is not enough. The contextual approach has proved to be essential in interpreting discourse (written/spoken) and in determining the intended message. It is also clear that the process of interpretation depends

on expectations on the part of the receiver. It is obvious from the discussion that context is essential in the process of semantics to interpret a sentence and may be looked for in the representation of one or more previous/following sentences. Also, meaning may be found in or inferred from general world knowledge. Thus, isolated sentences can be seen as isolated words, almost meaningless without context. Finally, one can conclude by saying that both approaches are important and complementary in the process of teaching, learning and interpreting discourse. It is clear that relationships between language forms and discourse functions is essential in the process of teaching. It is well known that language forms are the raw material of teaching any language. But, teaching students how to use language functionally is equally important.

## 2.5 Approaches to Discourse Analysis Concerning Writing

### 2.5.1 The Traditional Approach To Writing

An exploration of the different approaches to the teaching and learning of writing will be central in deciding what approach/s would better suit the needs of our students at JUST. Literature on writing shows that the teaching of writing (especially writing in EFL classes) has undergone distinct phases through the development of English teaching methodology over the past four decades.

In the traditional approach to writing, L2 learners were taught and encouraged to concentrate on the mechanics of grammar. Farghal [46], p.45 believes that students were

> urged to write errorless compositions no matter how disintegrated they were because grammatical accuracy was the major objective of writing. As a corollary, L2 learners writings were evaluated in terms of the number of errors they had rather than the meaning or logic they embraced.

The major emphasis, according to the traditional approach, was on imparting grammatical competence to the L2 learners, and adherence to grammatical rules was not only favoured but emphasised. The dominance of grammatical competence has been questioned in the past two decades. This apparently has led to a shift from form to function. This shift is apparent in the adoption of functional syllabuses as opposed to grammatical syllabuses.

Still, accuracy and grammatical exactitude continue to be the major emphasis of the functional approach. This shift from form to function, Farghal [46] believes, did not seriously consider text as discourse. The emphasis in the teaching and learning processes continued to be on grammatical competence. Accuracy of language has remained an essential measurement for evaluating L2 learners's written product. Thus, the treatment of texts as discourses remained unexplored. Farghal cites an earlier article of his [47], p.45 describing these grammatical and functional syllabuses and saying that:

> Grammatical syllabuses have basically been tinkering with the skeleton of language, while functional syllabuses have mainly been fiddling with the flesh of language. Thus the circulation of blood linking the two, the skeleton and the flesh, has practically been unexplored.

Thus, such syllabuses have continued to focus on the accuracy at the sentential level rather than on the interrelatedness of the parts of a text. Like Farghal, White [48] believes that language study and teaching was mainly pre-occupied with the predictable. He goes on to say that EAP was also concerned with teaching the learner to meet pre-specified objectives. The major work which concentrates on meeting the learner's needs is clearly exemplified in the work of Munby [49] and others. Brooks and Grundy [50], p.104 argue rightly that Munby's product-syllabus approach

> fails to recognise fully the notion of the learner as a whole person with a whole person's contribution to make to a process of gradual exploration and reformulation.

They assert that this approach "fails to satisfy fully all the areas designated in the 'human perspective'". Thus the teaching of writing was language focused. Writing was perceived as inferior to spoken language and as at a secondary level. It was only considered as a means of reporting what had been dealt with in spoken language.

### The Writing Process (Model-Based Approach)

From the research discussed above, it can be clearly seen that the product-syllabus approach proved to be very important in the learning and teaching process over the last four decades. Because the teaching of writing was grammar focused, it was felt that a model-based approach would be the appropriate way in class teaching methodology. The emphasis was on correctness and adherence to grammatical correctness and on the copying of models, both of language and text. Providing a model was viewed as being very important. In this process, teachers and textbooks were perceived to be the sources of language, and the provision of a good model was crucial.

As linguists started to realise the importance of text organisation, there came a shift in interest from language to rhetorical structure in written discourse. With this shift, there evolved materials with a focus on the organisation of rhetorical acts and the manipulation of cohesive features. Still, White [48], p.5 argues that "in both the language-based and rhetorically focussed approaches to the teaching of writing, the same basic procedural model is followed". In his article,White [48], p.5 describes the process in this approach as:

Study the model$\longrightarrow$ Manipulate elements$\longrightarrow$ Produce a parallel text.

In using this methodology, the model text is considered to be the starting point for teaching writing. The teacher starts by analyzing the text and by indicating the features of form, content and organisation. The teacher also discusses the linguistic items and the rhetorical patterns. The next step is to provide a new input as a basis for a parallel writing task. An ultimate requirement in this approach might

be to ask students to come up with a parallel text using their own information. Ballard and Clanchy [51] believe that the reproductive approach to learning with its strategies of memorization and rote learning remain the main type of formal education in most of the Asian countries.

White [48], p.5 believes that such a model-based approach remains popular within EAP. He asserts that the popularity of this approach within EAP is due to the fact that:

> much EAP writing is very product-oriented, since the conventions governing the organisation and expression of ideas are very tight. Thus the learner has to become thoroughly familiarised with these conventions and must learn to operate within them.

Since the concern of such an approach is with the organisation of the text and the correct use of form, the role of the model is essential as it provides an example for the students to replicate. The model is the primary task and is also the finished text. Thus, the focus in such an approach is on the product itself. White [48], p.6 criticises this approach as it encourages students to replicate models, thus encouraging them to use "some one else's writing", but "what the model does not demonstrate is how the original writer arrived at that particular product". Thus, the processes involved in writing the final product are not explored in such an approach. The learning process concentrates on mimicking the products provided by teachers.

Escholz [52] and Watson [53] have also criticised the model-based approach. They believe that it is not good enough for either mother-tongue teaching and for ELT. The reason behind their criticism is that they believe that the models provided are usually too long and do not relate to a student's own writing problems. Escholz [52] asserts that the imitation of models inhibit writers rather than helping them develop their own writing skills. Flower and Hayes [54] also argue that this model helps students to dissect the product without discussing the processes involved in writing the final version.

### Teacher Evaluation and Feedback

It has been clear so far that in the model-based approach, the mastery of the mechanics of grammar is considered to be a major criterion in the evaluation of L2 learner's writing. Because teachers were considered to be instructors, Allwright [55], p.109 argues that teachers, in this approach, too often "conform to student's expectations that [teachers] are wholly responsible for correcting language and evaluating text quality".

Following the traditional approach, teachers usually spend long hours identifying and correcting surface errors of syntax, lexis, spelling and punctuation. This kind of evaluation is usually presented and discussed in class. As for the major issues of composition — overall organisation, sign posting, cohesion, information packaging, and clarity of meaning — These, Allwright [55] believes, are occasionally mentioned and briefly dealt with by unhelpful notes on students' texts. What teachers usually do, when faced with mistakes or unclear meaning, is impose their own model sentences and ideas in place of the original which is not very helpful in developing the writer's sense of autonomy.

Allwright [55] shows her dissatisfaction with this method because of the inefficiency of such feedback. Such feedback, she states, encourages students to be passive learners by spoonfeeding them. This spoonfeeding methodology prevents the development of the writer's autonomy, which Allwright identifies as being an essential aim of an academic writing course. Therefore, a need for a change in the teaching of writing arose. Linguists started to consider the communicative approach as an alternative to the traditional model-based approach which will be the focus of the following section.

## 2.5.2 The Communicative Approach To Writing

As the traditional approach proved its inefficiency in improving writing skills, there have emerged discourse-oriented studies which challenged the concern with anticipated outcomes, and with mimicking the pre-specified models. The main concern of these studies has been the interrelatedness of the parts of a text rather than

mere grammatical exactness at the sentential level. Thus, intersentential relations have become far more important than intrasentential ones. The recent thinking as White [48], p.5 sees it, "emphasises the processes of discovery, adaptation and enquiry, based on the assumption that education is concerned with unexpected rather than predicted outcomes".

One of the premises of this approach is a concern with what the learner wants to say. Because he is seen as an initiator, the learner's intention is of paramount concern. The learner [48], p.6 "is now liberated by being encouraged to communicate by all means possible". Fluency rather than accuracy, which is only a small part of the writing skill, becomes of great importance. The increasing dissatisfaction with a model-based approach to the teaching of writing led to the attempts at discovering how writers actually do write. In other words, this approach considers as its primary concern the processes which *underline* the writer's composition.

### The Writing Process. (Process-Based Approach)

Unlike the traditional model-based approach, the communicative process-model approach has different priorities concerning writing. White [48], p.7 summarizes this procedural model as:

> Task specified$\longrightarrow$ Communicate as far as possible $\longrightarrow$ Study model$\longrightarrow$
> Practice as necessary$\longrightarrow$Recycle.

In this model learners are encouraged to use what they already know and what they can do. Here, the first focus is on the task, which means that neither the process nor the product is pre-determined. After specifying the task, communication with learners takes place in order to stimulate their thinking about the writing of the topic. In the third place comes the model which has to be studied and only used as a reference, not to be mimicked. Robinson [56] believes that the features used in this approach "seemed to bring a way of getting students to write more fluently". Similarly, in his doctoral thesis in which he explores the impact of teaching writing to University students in Lebanon using the process approach, Ali [57] found that

students' writing under this approach has improved more than students who were taught using the product approch.

But, how can the processes which go on when a writer is composing be discovered? Murray [58] believes that the "process can not be inferred from product any more than a pig can be inferred from a sausage". This has led to the observation of how good and bad writers actually write.

In order to discover the various processes which underlie writing, few studies used protocol analysis. This analysis, being dependent on subjective and self reporting data, was somehow controversial. Still such studies gave interesting and useful results.

One of the results of such studies is the inappropriacy and inefficiency of a linear model of writing. It has been noticed that the writing process is highly recursive. During the process of writing, the writer does not move in a linear way from collecting ideas, to organizing them, to writing them down. It is clear that as we write, we tend to change things, discuss them, and reorder the structure of our material. Also, it has been confirmed by such studies that writing essentially involves a thinking process. Therefore, a close look at cognitive theories will help in revealing the uncertainties of the processes used by a writer while composing. Of particular interest in writing as a cognitive process is the concept of schemata.

### Writing as a Cognitive Process (Schemata)

Schemata are primarily those expectations that help us to understand and interpret the world around us. Each time we gain new information, it might be either related to existing schemata and understood in relation to them or the new information might be added to the schemata themselves. This concept of schemata is the one that enables us to [48], p.7 "develop more varied and adaptive behaviour and enable us to make sense of reality more easily". It is thought by researchers that schemata are stored in long term memory. The writer usually draws upon schemata while composing.

In their research into the process of writing, Flower and Hayes [54] describe three major elements: long term memory, task environment and the writing process. They presented their model as:

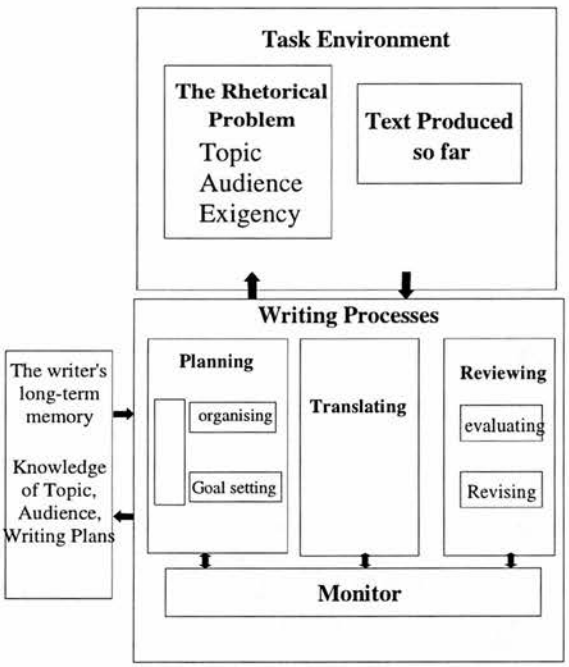


Figure 2–3: The Writing Process [54]

Figure 2–3 suggests that writing consists of three major processes: planning, translating, and revising. In the planning process, the writer gathers information and organises it with the help of the task environment and long term memory as well as knowledge of topic and audience. By doing this, the writer should be able then to set goals and to establish a writing plan to guide the text he wants to produce. The translating process helps the writer to produce language that corresponds to information in the writer's memory. As for the reviewing process which helps to improve the quality of the text, this is done by detecting and correcting mistakes in the text with respect to language conventions and accuracy of meaning, and by evaluating the extent to which the text achieves the writer's goals. The multiple arrows in the chart indicate the complex activity and the active organization of the cognitive processes during composing.

Like Flower and Hayes, Smith [59], p.9 also addresses the complexity of writing processes. He believes that composing is not merely done by joining words

together or by translating certain ideas into words; it is rather done by "building a structure (the text) from materials(the conventions) according to an incomplete and constantly changing plan (the specifications of intentions)".

Like other writers, Smith [59] and Murray [58] assert that writing involves the cognitive journey in discovering the meaning of what it is that the writer wants to say. Hamp-Lyons [60], p.11 also believes that writing is a

> cognitive activity that calls on many components of personal experience, attitudes, knowledge of ideas, issues, and factual information, but that requires a person to take and shape some parts of this complex web of material into a rhetorical, syntactic, and mechanical whole.

She adds that the quality of any text is not in each of those items individually, but in how these items are interwoven to achieve the writer's purpose.

Based on the responses of some members of the science faculty of Stanford University, Jenkins [61], p.63 found from a study done by Elliot and Kilduff [62] that faculty members believe that the real problem is "not writing per se, it is *Thinking*". Faculty members believe that the "core of research is drawing clarity from chaos". Another member felt that "the real concern is in making valid choices about what goes into a paper, how it is organised, what the conclusions are, and which ones are valid and which should be qualified". More on the concept of writing as a cognitive process will be discussed in section 2.6 under the heading "*The marriage of process and product*".

### Process Oriented Approach and Teacher Evaluation

As has been observed from research done on evaluation and feedback, the traditional methods of assessment and feedback proved to be inefficient and unhelpful in improving learners' writing skills. It is believed from studies done on evaluation and feedback that correcting surface errors of syntax, lexis, spelling and punctuation does not meet the real problem. Allwright [55] believes that the more essential aspects of writing are issues like: overall organisation, signposting, cohesion, in-

formation packaging, and clarity of meaning. These central issues, she believes, are not seriously dealt with and are usually dealt with by too obscure notes on students texts.

Brooks and Grundy [63] believe that the language teacher should act as an enabler of student self-discovery rather than an instructor. They assert that an enabling teacher tries to widen the possibilities for self-correction. This approach, they believe, will help to develop students' ability to write more efficiently. Chenoweth [64] also emphasised that this will bring (with good writers) the ability to correct not only surface problems, but also to correct the major and the macro ones, such as adding, deleting, and organizing their discourse. Therefore, she believes that it is important for teachers to expand their students' repertoire of different strategies for rewriting composition.

Because of the defective results of the traditional assessment and feedback, and because of its inability to develop writer autonomy, Allwright [55], p.110 tries to come up with an alternative methodology in assessing student's writing. She believes that in order to develop writer autonomy, which she believes to be an essential aim of an academic writing course, "learners have to be able to accept responsibility for editing, correcting and proof reading their own texts". She suggests that in order for learners to do this, they need to build up criteria of their own which will enable them to judge the standard and quality of their writing.

The alternative that Allwright came up with is the concept of reformulation rather than the traditional concept of feedback. This method was first suggested by Levenston [65] and further developed by Cohen [66]. These studies by Cohen and Levenston became the cornerstone of fostering writer autonomy. Reformulation as viewed by Allwright [55], p.110 "is an attempt by a native writer to understand what a non-native writer is trying to say and then to rewrite it in a form more natural to the native writer".

This reformulation may involve changes in any or all of syntax, lexis, cohesion and discourse functions. The concern of such reformulation is to value and respect the writer's own intended purposes so as to bring them out during the act of reformulation. This is what differentiates this concept from the traditional way

of feedback in which the teacher tries to delibrately impose his/her ideas. Thus, the primary intention of reformulation is to provide [55], p.110 "a sympathetic reader's interpretation in acceptable English, of the original writer's text".

Brooks and Grundy [63] suggested three major ways that can help in evaluating student writing skills: the first one is to ask students to rewrite sentences or paragraphs while writing in order to give writers a chance to express their meanings properly. The second method is by asking students to rewrite having the reader in mind and considering his previous knowledge, cultural assumptions and linguistic ability. As for the third method, they believe that it would be helpful to ask students as a final step to rewrite in order to eliminate distracting features, such as correcting mistakes in punctuation, spelling, grammar and chunking discourse.

From such studies it is clear that aspects of organizing and creating a cohesive text are of great difficulty for students to master. The traditional methods of feedback as has been suggested by Zamel [67] fail to focus on the importance of these aspects.

Allwright [55] further discusses the importance of reformulating over feedback in terms of its concern with drawing the writer's attention to major problems such as clarity of time reference, explicit signposting of intrasentential and inter-sentential relations, avoidance of redundancy, overall structure and organisation, removal of irrelevant material, and word choice and collocation along with the corrections of surface structure. In using this concept of reformulation, students are encouraged to prioritize. Allwright [55], p.113 believes, that they are urged to give an initial priority to

> organizing, developing, sequencing and linking ideas and are advised to attend to grammar, word choice, spelling, puctuation, layout and handwriting later".

They are also encouraged to realize the importance of writing several draft versions before producing the final one.

Based on Allwright's [55] study, it is believed that the real problem for non-native students includes raising their awareness of text organisation, signposting and the creation of cohesion. Such reformulations promote student discussion concerning key issues of academic writing while in turn promoting the development of student autonomy.

Ballard and Clanchy [51] categorize L2 learners problems under three headings: the first problem, they believe, has to do with surface language correctness. The second problem has to do with structuring and presenting ideas in terms of rhetorical styles. The third and most important is the problem arising from a disjunction between students attitudes to knowledge and staff assumptions about appropriateness of different attitudes.

They believe that L2 learners are expected to extend their repertoire to meet the demands of different cultural settings. They argue that the entire process of education is shaped by its culture. Because the culture between student and teacher is of similar shape, the problems of learning are merely of educational expectations and methods.

Ballard and Clanchy [51] believe that L2 learners, during the learning process, should use their existing knowledge and at the same time try to expand their repertoire to meet new information. L2 learners should be encouraged to analyse and to speculate, not only to memorize and imitate as in most cases in L2 learner situation.

Wall [68], p.123 believes that a reformulator can try "to bring out the writer's original intentions by stating the apparently intended relationships wholly explicitly". He [68], p.127 believes that there should be "a shift in teaching emphasis towards the wider questions of essay structure in general and the art of logical presentation in particular". Brooks and Grundy [63] believe that the conventional role of the teacher diminishes as learners are encouraged to work together and make discoveries for themselves. Similarly, Garcia [69]believes that at an advanced stage of teaching composition, learners should acquire the ability to become feedback-independent, because teacher-feedback will eventually come to an end as soon as

instructions are over. This will also help students to use L2 discourse conventions more automatically.

## 2.6 The Marriage of Process and Product

The process of writing itself is a communicative activity within which smaller activities take place. In order to produce the final product, which is directly related to the student's target needs, learners have to master the micro-skills associated with the task.

Widdowson [70] rejects the idea of basing a course in terms of target situation only for it is concerned with 'eventual aims' rather than the more desirable 'pedagogic objectives'. Following Bloor and St John [71], it is clear that most students belive that writing projects is usually a frightening experience, and for non-native learners it is especially formidable.

Project writing, as research shows, has to be both process-oriented and product-oriented. It is concerned with both target needs and with providing a means by which students can involve themselves in the process of acquiring the language. Davies [72], p.130 also believes that EAP is "inescapably concerned with both process and product", for the same reasons . She believes that writing for EAP is concerned mainly with process. For L2 learners, she asserts, two processes are essential: "the process of learning about oneself and the world through writing.....and also the process of learning about language through writing". Robinson [56] also asserts that in EAP situations, students usually have clear targets or products with certain specifications and that, therefore, EAP classes should include some study of models and finished products.

For writing to be successful, students need to build on their schemata to provide a top level framework for structuring discourse. They also need to acquire knowledge of language forms to build up their structures in order to meet the ones from top-down. Davies [72], p.134 believes that

> an exclusive focus on top level features has limited potential; it may provide an outline and section headings for a text but will not result in a full and comprehensible realization of it. Conversely, a focus exclusively on form, at sentence level, will not equip students for the creation of coherence and discourse. What is required is a match between top-down and bottom-up knowledge.

Studies show that when subjects fail to generate an appropriate schema, or to check the current schema against bottom-up input, understanding breaks down. Rumelhart [73] proposes three reasons for such failure: the first reason, he believes, arises when readers do not have the appropriate schemata which make their understanding of concepts different from what is intended. The second reason for such failure occurs when readers are not given enough clues to interpret the writer's intentions. As for the third reason, usually it comes when readers can only understand the written text, but not the writer's intentions.

Thus, the provision of the right schemata, enough clues and paying attention to the purpose of the writer will lead to full comprehension of written texts. Similarly, Buick [74] favors a combination of product and process strategies in teaching and suggests a model of language learning that consists of three key stages: noticing, structuring and proceduralization. As for the first stage, Buick believes that the learner has to become aware of a structure in input before it can be transferred into short term memory. He asserts that this awareness can be speeded up by the teacher. During the stage of structuring, the learner should be given enough time to notice, renotice, structure and restructure in order to ensure that the receptive knowledge becomes productive. As for proceduralization, it is the process whereby linguistic knowledge becomes automatic.

## 2.7 Conclusion

Based on the discussion above, it can be clearly seen that research nowadays encourages the blending of the two approaches in the process of analysis. It seems important to combine the two analytical worlds of structure and function. Schiffrin [14], p.339 believes that

> not only do the types of structures analyzed in discourse lead to the identification of functions, but the types of functions analyzed in discourse are linguistically realized in ways that create structures.

It is important to examine each one of these approaches in the light of the other. Neither structural analysis per se nor functional analysis per se is appropriate. A combination of the two facets of analysis may help bring out an analysis that overcomes the weaknesses of both approaches if used individually. Therefore, it is important to combine the study of structure and function in order to understand the relationship between text and context, and to make clear how discourse is related to communication.

# Chapter 3

# Methods of Analysing Written Texts

## 3.1 Introduction

As has been mentioned in chapter two, a combination of structure and function proves to be of great importance in coming to understand the relationship between text and context and in relating discourse to communication. Accordingly, in recent years a popular way of approaching the problem of describing discourse organisation has been to treat discourse in some way as the product of semantic relations holding between sentences or propositions. Furthermore, a number of attempts have been made to treat the written text from an interactive point of view and to bring it closer to spoken interaction. This view has been developed by Sinclair and Coulthard [75]. Such a view has been adopted by a number of analysts who perceive texts as being communicated between two participants: writer/reader or speaker/listener. A survey at this point of the different methods used in analyzing written texts will be of great importance in deciding what method/s to use for the analysis of my data.

Sinclair [76] is one of the analysts who has developed his own theory for such an approach, based on the concept of two planes of discourse: the interactive and the autonomous. The former is mainly concerned with the continuous negotiation between participants and the latter is concerned with developing a record of experience. The interactive level is more prominent in spoken discourse than in written

discourse, although a writer usually can conceive an idealised co-participant. During negotiation (for instance, in conversation or reading a letter), a gradual sharing of relevant experience is developed by activating previous knowledge that can be used in the new contexts laid down by the movement on the interactive plane. Sinclair [76] argues that this reflects a simple model of sentence structure. But in a larger discourse, Sinclair [76], p.72 suspects that "this process can be seen as a continuous internalisation of the inner space of language. The process is both individual and collective". The latter plane of discourse considers the individual's own experiences in which text (written/spoken) organisation and maintenance are considered as the pillar of this plane. The following example makes the distinction between these planes clearer:

(1) Why did you leave that job?

(2) Why not?

In the above, (1) is a question that works autonomously (by getting at a reason) and (2) one that works interactively (by being an interaction and a rhetorical means of rebutting and discounting). These show how the two planes of discourse, the autonomous and the interactive, work together in speaking, rather than in writing, where the autonomous plane tends to prevail, but not exclusively.

Sinclair [76], p.73 believes that communication can be successful because of the great amount of shared experience. He goes on to argue that if access to the autonomous plane is removed, there will be no interaction because of the removal of the necessary aspects of syntax, vocabulary and textual reference. Thus, the two planes of discourse are interdependent in that each plane needs the other one in order to have a complete comprehensible discourse.

Widdowson [77] tries to use dialogue to make monologue more explicit, but fails to give a precise framework to work through. The use of dialogue and the emphasis on clause relations have been much more fully discussed by Winter [78], [79] and Hoey, who draws his discussion and examples from Winter's notion of clause relations [80], [35]. In their studies, they try to show the importance of

clause relations and the valid use of dialogue in representing the process of understanding of a written text. This view of clause relation will be essential during the analysis process through which the obstacles encountered in writing English by JUST students will be explored.

In his work on clause relations, Winter tries to place a sentence in its context next to its adjoining sentences in order to explain its meaning and then to reveal the clause relational organisation of a passage as a whole. Winter [81] believes that the grammar of the clause is important because it embodies all systems for signalling relations. It also restrains the selection from our knowledge of the world according to the immediate situation in which we are communicating. Hoey's approach to discourse analysis draws on Winter's [79] notion of clause relations. Hoey [35], pp.18-19 adapts Winter's definitions of clause relations in the following way:

> A clause relation is the cognitive process whereby we interpret the meaning of a sentence or group of sentences in the light of its adjoining sentence or group of sentences.
>
> [Furthermore, it is] the cognitive process whereby the choices we make from grammar, lexis, and intonation in the creation of a sentence or group of sentences are made in the light of its adjoining sentences or group of sentences.

Hoey [35] asserts that the clause relation is concerned primarily with meaning in that it involves the increase in meaning of clauses when added together. He confirms Winter's concept of the importance of interpreting a sentence by placing it in its context. He believes that making clause relations specific helps to unfold the acts of interpretation by reader/listener of what he/she encounters in the light of what has already been encountered.

Farghal [46], p.45, working from a perspective focussed on Arabic writers of English, believes that the study of clause relations should be implemented in EFL writing classes because of their integral part in the writing process, in that they go

beyond the sentence level to the interrelatedness of the parts of a text. Accordingly, a clause relation such as instrument-achievement, for example, Farghal [46], p.46 believes "can be made a micro-writing objective by highlighting it in authentic examplars, so that it figures spontaneously in learners' compositions". Another reason why clause relations should be included in the EFL class material is because of their combinability in text to form recognisable patterns such as in the case of Problem-Solution, Hypothetical-Real and General-Particular as recognised by Hoey and Winter [82].

Similarly, Halliday [83] believes that by looking at the structure of the clause, and at what is above and around it (i.e. clause complex and cohesion respectively), the discourse analyst can explore how semantic features are represented in the grammar. Halliday, of course, is writing in a descriptive rather than an applied context, but the point he makes is clearly significant for ideas and approaches in this area.

In this chapter, I will try to show how the discourse analyst, in his analysis, needs to discover what it is in the discourse that allows the reader's acts of interpretation to take place and what it is that ensures that the various acts of interpretation that take place occur within a given range of possibilities. The following section will discuss the main types of clause relations which help to show how discourse is structured and understood.

## 3.2 Types of Clause Relations

Winter [81] believes that the study of written discourse should include a study of the grammar of the clause relations that pertain to each sentence. Winter [79] argues that clause relation is a study of the various relations that link sentences together as members of a sequenced discourse. A relation might be established in a discourse by various means, such as subordinators, conjuncts, lexical signals and repetition. Winter asserts that clause relations are finite, and special items of vocabulary can be used to reflect such relations, such as achievement, affirm,

cause, different, etc. These relations can be discussed under two broad headings: logical sequence relation and matching relation which are considered to belong to a closed-system in which their function is realized in their connective behaviour in discourse. A full understanding of how these relations are organised helps in understanding the intended message of JUST student writings or, rather, the shortcomings in achievement of what is intended.

### 3.2.1 Logical Sequence Relations

These are relations that hold between successive events or ideas, whether actual or potential, the most basic form of this relation being time sequence. Hoey [35] draws on Winter's notion of clause relations to show the various kinds of clause relation which might take different forms such as: condition-consequence, instrument-achievement and cause-consequence. An example of condition-consequence is given by Hoey [35], p.19.

> *If the royal portrait was not used* [on stamps], the arms of the country or reigning house were often taken as a suitable symbol.

Here, the subordinate clause (the italicised clause) acts as the condition, while the main clause acts as the consequence.

An instance of instrument-achievement relation can be seen in the following example from Hoey [35], p.19:

> Mrs Barton lighted a dip *by sticking it in the fire.*

In this example, the subordinate clause acts as the instrument, whereas the main clause acts as the achievement.

The following example given by Hoey [35], p.19 shows the relation of cause-consequence.

> She was here *because she was waiting for somebody or something.*

The subordinate clause here acts as the cause, while the main clause acts as the consequence. Another example from Hoey [35], p. 67, this time one that shows the importance of such logical sequence between sentences, is the following:

> All soft fruits are surface rooting with the root feeding areas extending several feet away from plants. I, *therefore*, limit cultivations between the rows to hoeing or a light going over with a three-pronged hand cultivator.

The relation in the above example is clearly shown by the logical sequence (and most particularly by the italicized connective) to be one of cause-consequence.

From the above it should be clear that, where a writer pays attention to such logical relations, the reader will be able to understand the intended meaning of the writer. Such logical sequences activate in the reader the knowledge with which he/she can process the presented text. The reader in other words is aided by such cues to anticipate and predict in order to arrive at the correct meaning. Winter [79], p. 11 believes that the importance of logical sequence relation "is evident in the fact that they realize the significance of time/space sequence". Examples of such items of logical sequence include: achievement, cause, condition, effect, follow, fulfillment, grounds, instrumental, lead to, mean, method, etc. [79], p.12. JUST students seem to have difficulties in using such functional links. Their writing (as will be seen in chapter four) seems either to lack such connectors, or where they are used, they are used inappropriately.

### 3.2.2 Matching Relations

These are relations where statements are matched against each other in terms of degrees of identicality of description. This kind of relation might be of contrast (incompatible) or of similarity (compatible). An example of contrast is given by Hoey [35], p.20.

> The skirmish was not taken very seriously at Vienne. What was taken seriously, *however*, was the fact that Constantius had named me his fellow consul for the New Year.

In this example the relation of contrast is clear from the use of the contrast item 'however'. The contrast here is between what was and was not taken seriously. Winter [79], p.11 asserts that this kind of relation realizes the comparison of what is true. He goes on to argue that in comparison, there are two different relations that can be expressed here: one of denial, the other of affirmation. Some of these items include: compare, contrast, converse, deny, identify, etc.

An example showing a compatible relation from Hoey [35], p.20, is the following:

> Upstairs Fred *thumped* and *bumped* and *tossed* and *turned.* And downstairs Ted *moaned* and *groaned* and *crashed* and *thrashed* all over the bed.

The compatibility here is achieved by repeated use of identical tenses (simple past) in both of the clauses and by compatibility of identity of sequences of onomatopoeic descriptions. It is possible in certain discourses to find more than one semantic relation in a pair of clauses, as in the following example from Hoey [35], p.20.

> He did not want to go away for Easter *because* he did not wish to leave London *because* he did not wish to leave Rose.

In this example it is clear that the semantic relation of the three clauses is of double cause-consequence and double matching compatability. Clauses one, two and three are compatible in their negative desires. The meanings here of cause-consequence and of compatibility are simultanously present and complementary, but the dominant relation is one of cause-consequence. I believe that it is important to raise students' awareness of the importance of such connectors. This kind of clause relations will be one of the concerns of this study. It will be obvious that JUST students do have problems in using such connectors.

## 3.3 Signals of Clause Relations

There are different types of signals that can be used by the writer/speaker to signal to the reader/listener the different kinds of clause relations. Some of these signals are grammatical connectors such as conjuncts and subordinators. Other kinds of signals are lexical. The following sections will discuss and give examples of both types.

### 3.3.1 Subordinators and Conjuncts

These types of signals help the reader/listener to make the right connections between the parts of a discourse and in predicting what would follow. Zamel [84] believes that, very often in students' writing, the meaning or intent has been left ambiguous. She relates this ambiguity to the fact that conjuncts are either missing or are used inappropriately, either semantically or syntactically. These subordinators and conjuncts are called vocabulary 1 and vocabulary 2 by Winter [79]. These two types of signals, Winter believes, belong to the closed-system vocabulary. He believes that the limited number of ways in which we can interpret certain sentences in sequence is somehow represented by the closed-system vocabulary of explicit items which link sentences. Hoey [35], p.21 gives an example of the use of conjuncts and shows how the study of their use helps to clarify the clausal relation.

> It was over, it was known, it was decided, there was nothing at all, ever, to be done about it. He might as well, now, go to bed. *So* he stood up, put down his empty glass, looked at himself with some curiosity in the mirror, to see if he looked different from having understood, and went up to bed.

Here, the use of the conjunct 'so' shows that the three sentences together express a cause-consequence relation. The cause here is expressed in the first two sentences, whereas the consequence is expressed in the third sentence. This example also

shows that cause-consequence relation does not have to occur between two adjacent sentences. Here the cause-consequence relation is between sentence one and two as one unit and sentence three as another. The use of the conjunct 'so' helps the reader to predict that a consequence is to follow.

The use of subordinators and conjuncts also helps sequencing in discourse and makes the relation and the meaning more explicit and more acceptable. Accordingly, both sequencing and subordination can be seen as methods for supplying the same meaning to a discourse. The following sequence (a) from Hoey [35], p.35-36, which is described as being unacceptable, can become completely acceptable with subordination as shown in the later version (b).

(a) I beat off the attack. I opened fire. I saw the enemy approaching. I was on sentry duty.

When sequence (a) is read, since there is not a natural iconic order between language and what is described, one can make out no clear sequence for the events and thus it sounds strange. But, when suitable subordinators are added, the sequence and the meaning become clearer as in the following version (b).

(b) I beat off the attack *by* opening fire *when* I saw the enemy approaching *while* I was on sentry duty.

So, it is clear from the above examples (a) and (b), that subordinators and conjuncts are very important in text organisation and in helping the reader/listener arrive at the correct meaning and the intended message of writer/speaker.

### 3.3.2 Lexical Signals

It is not always the case that subordinators and conjuncts on their own are sufficient to achieve or lead to a clear interpretation. Accordingly, Hoey argues that

lexical items in the interpretation process (and, by extension, we would say in the composition process) must be one of the first steps in the analysis of any discourse. Hoey asserts that lexical signalling must be one of the first steps in the analysis of any discourse because he believes that the recognition of these signals has to be considered as essential to a successful discourse analysis. These lexical signals may spell out a relation before, during or after the event. In fact, the use of lexical signals helps in interweaving the achieved discourse and in making it more coherent. Nunan [85], p.28 stresses the fact that "lexical cohesion occurs when two words in a text are semantically related". Halliday and Hasan [31] stress the importance of patterns of vocabulary items in texts, such as reiteration and collocation, in creating cohesion.

This type of signal belong, according to Winter [79], to the open system vocabulary. The function of these items is observed in their lexical behaviour in the clause in that they work as special signposts of what a sentence means in sequence with its adjoining sentences. This type belong to the open-system words which have a large open-ended vocabulary. These signals are called lexical because the items are chosen in the same way as other lexical items, such as nouns, verbs and adjectives, etc, and so, grammatically, behave like subject, verb, object or complement which can be premodified, modified or postmodified. The importance of these signals is that they help readers in predicting what will follow and success of any piece of writing should adhere to the predictability that has been already established in the text. It seems that this is a problematic area among JUST students in that they do not realize the importance of providing, for example, reasons for their choices which results in insufficient information for the reader to comprehend the given text. The satisfaction of such predictions is of vital importance in science writing, therefore it will be one of the main concerns of this research.

Hoey [35], p.63 maintains that lexical signals are important because they are the writer's/speaker's

explicit signalling of the intended organisation and therefore obviously

> of primary importance; it is possible that they are one of the main means whereby a reader/listener 'decodes' a discourse correctly.

In addition, such lexical items help in signalling not only intersentential relations, but also the organisation of larger passages and whole discourses (something which will be of great importance to the present research as I am interested in looking at and analysing reports written by students at JUST). In investigating lexical choice in paragraphs and essays written by Arab students, Zughoul [86] asserts that on many occasions lexical choices lead to texts that do not only sound odd, but also to texts with funny utterances which are not easily comprehensible. Zughoul believes that the study of lexical choice, an area that may be classified under interlanguage, has not received as much attention as phonology and syntax in language learning/teaching research. It has been found that lexical use in teaching/learning materials acts as a vehicle for illustrating phonological and syntactic pattern.

In his analysis, which is based on qualitative and quantitive errors, Zughoul [86] defines errors made by his students, their sources and their implications for language aquisition/learning. After having interviewed his students making sure of their intentions in their choice of lexis, Zughoul classifies these lexical errors into thirteen error types according to their high frequency as follows: assumed synonymity, literal translation, derivativeness, collocation, similar forms, message translation, idiomcity, influence of Arabic style, paraphrase (circumlocution), verbosity, analogy, binary terms and overuse of some lexical terms. He argues that there are different reasons behind such errors. One of the reasons is languge interference, either in that students assume that they can apply the same structure as in Arabic, or in that students presume that there is an exact equivalent for certain words in the target language. Another reason for such problems is the use of Arabic-English, English-Arabic dictionaries where the students look for the literal meaning without seeing it in the right context. Such problems will be explored and dealt with in chapter four.

Winter [79] calls such lexical items 'items of metastructure', indicating their

use to serve or facilitate large-scale functions. Hoey [35], p.22 gives an example of a specific lexical item and shows its importance in comprehending the kind of clause relation involved. Example (a) below shows a lack of indication of the type of clause relation involved. Although sentence (a) is considered as complete in terms of having a subject, a verb and a complement, it is nevertheless inadequate as information. Sentence (b), however, shows a better understanding of the clause relation as a result of the use of a particular lexical item and the addition of more context. Example (b) below, having provided minimal context, is more explanatory in comprehending the meaning of the sentence. The introductory sentence in version (b) explicitly asserts the relation.

> (a) Alderman Frank Price sees the city as a sort of anvil; my barber thinks of it as a 'neutral sort of place built by people who worked hard for generations'.

The clause relation in this sentence is ambiguous and makes the reader uncertain about the kind of relation, while in the following sequence (b), the relation is made clearer by the addition of an introductory sentence which adds more context that provides more knowledge and so helps in asserting the type of relation involved. The use of the lexical item 'different' helps in revealing the type of relation involved. Halliday and Hasan [31] assert that the lexical environment of any item does not include only the words that are somehow related to it, but also all other preceding items. All of these items, Halliday and Hasan argue, contribute to its lexical interpretation in a given situation. The production of a cohesive text can be achieved by the use of words in the context of related lexical items.

> (b) People think of Birmingham in *different* ways. Alderman Frank Price sees the city as a sort of anvil; my barber thinks of it as a 'neutral sort of place built by people who worked hard for generations'.

In this sequence, and as a result of adding more context to sentence (a), the clause relation becomes clearer. The use of the lexical word *different* tells the reader that a contrast of people's opinion of Birmingham is going to follow. Sentence 1 in example (b) is a statement of contrast in general of peoples' perception of Birmingham. The notion of contrast is made explicit by the lexical item *different* since this lexical item precedes the details of this contrastive comparison between two persons opinion of Birmingham. This first clause, thus, predicts the following information by realizing the contrast in the second part of the example. Therefore, we can say that an understanding of one member of the clause is completed by its second member.

Winter[79] calls these lexical signals vocabulary 3 (i.e. "whatever is being referred to by the signal is referred to as lexical realization" [35], p.23. Winter [79] introduces this category as items which signal the semantic content of what is to follow in a text. He believes that, for text structure to be considered as complete, signalling of information should be realized. For instance, the lexical item 'different' in the previous example (b) above, must be followed by substantiation. Winter asserts that this type of signal and vocabulary 1 and vocabulary 2 are frequently used to paraphrase each other given different contexts. The following example from Hoey [35], p.23 shows an instrument-achievement relation, where either A or B can be paraphrased out of context as C.

> A. *By* appeal*ing* to scientists and technologists to support his party, Mr. Wilson won many middle-class votes.
>
> B. Mr. Wilson appealed to scientists and technologists to support his party. He *thereby*, won many middle-class votes in the election.
>
> C. Mr. Wilson's appeals to scientists and technologists to support his party *were instrumental* in winning many middle-class votes.

Although in the three examples above different signals are used, subordinator (by....-ing), conjunct (thereby) and predication (were instrumental), all these signals reflect the same kind of clause relation, that is, instrument-achievement. It

is clear from the above examples that lexical signals are important in linking and organizing discourse and thus realizing the type of relation. Lexical signals can be used to spell out relations either before, during or after the event (i.e. a lexical signal might be either an anticipatory item or an item of retrospection). The following example from Hoey [35], p.24 shows a lexical signal functioning as an anticipatory item:

> A Cartesian diver is a toy that depends on *two principles*: the first is that air is elastic and the second is that air is lighter than water.

In this example, the lexical phrase *two principles* functions as an anticipatory signal and all that follows the colon is the lexical realization referred to. It is important to mention not only that the presence of these lexical items creates textual cohesion and thus coherence, but also that the interaction of these lexical items one with the other is, of course, also involved. Another factor that should be paid attention to while analyzing lexical cohesion, is collocation which will be the focus of the following section.

### 3.3.3 Collocation

Collocation (i.e. the association of lexical items that regularly co-occur) is considered to be the most problematic aspect of lexical cohesion. Because a good deal of the skill of fluent readers comes from their ability to anticipate, Chapman [87] believes that, word associations greatly assist this process. He proceeds by arguing that a consideration of the extended use of collocation through a passage is perceived as a major contribution to the cohesiveness of a text. The successful use of collocation in creating cohesion in a text depends on the proximity of certain pairs (or groups or sets) of words. There are two kinds of collocational proximity: the first one is the possibility that a certain pair of words will co-occur, and the other kind of proximity is the real distance separating the two words in a pair of items.

In collocation, there are some words that are related to each other in terms of oppositeness, such as in *boy* and *girl*. In fact, Halliday and Hasan [31], p.285 assert that "there is cohesion between any pair of lexical items that stand to each other in some recognizable lexicosemantic relation". This kind of relation is seen not only in synonyms and near-synonyms, such as in *smart...intelligent*, and superordinate-hyponym, such as in *chair...furniture*, but is also seen in pairs of opposites of various kind, such as *wet...dry*. Halliday and Hasan maintain that pairs of words that exist in the same ordered series, can create a cohesive influence as well, such as *dollar...cent*, *north...south*. The same thing applies when unordered lexical sets occur next to each other, such as *road...rail*, *red...green*.

Other pairs of words can be related to each other semantically if they have part-whole relationship, such as in *tree...branch*, or might be related as part-part, such as in *mouth...nose*. Other words might share a relation by being co-hyponyms of the same subordinate item, such as *chair...table* (both are hyponyms of *furniture*).

There are certain words that might not have any systematic semantic relationship, but still have semantic relations by the tendency of sharing the same lexical environment, and so to co-occur with one another. Examples of such pairs are: *door...window*, *king...crown*, *boat...row*, *sunshine...cloud*. Halliday and Hasan [31], p. 286 point out that:

> any two lexical items having similar patterns of collocation — that is, tending to appear in similar context — will generate a cohesive force if they occur in adjacent sentences.

This kind of lexical relation can be also built for long cohesive chains in discourse. Such patterns can occur at the intersentential and intrasentential levels. The collocational function is considered in terms of two kinds of relatedness: the first one is the relatedness in the linguistic system, and the other one is the relatedness in the text. These two kinds are referred to as general and instantial.

Kharma and Hajjaj [9], p.67 believe that "[t]his tendency to co-occurrence is the formal pattern into which lexical items enter". Accordingly, it is said that

one item collocates with another item or items. Similarly, Halliday [83], p.312 asserts that collocation as an instance of lexical cohesion depends "on a particular association between the items in question". Halliday's following example shows this type of lexical cohesion.

A little man of Bombay.
Was *smoking* one very hot day.
But a bird called a snipe.
Flew away with his *pipe*,
Which vexed the fat man of Bombay.

In Halliday's example, the word *smoking* collocates with the word *pipe*. Halliday argues that, for this kind of collocation, there is a semantic basis. The word *pipe* is known to be something that people smoke, so that the noun *pipe* and the verb *smoke* are standardly related as range and process in a typical behavioural process clause. The word *pipe* in the above example is interpreted as *the pipe that the little fat boy of Bombay was smoking at that time.* It is assumed that if the word *pipe* is present in the text, then the word *smoke* may be around somewhere, thus creating cohesion. Of course, it might on occasion only be strongly implied, not expressed. Clearly, cohesion will only arise when both are expressed in a text. Halliday considers collocation to be one of the factors that helps the reader to predict what might follow.

Collocation is considered as one of the main problems of JUST students. It is perhaps best to assume that the problem might stem from the fact that each language appears to have its own collocation pattern. It seems that JUST students lack the ability to put the right words together, so this area is of great importance in the present study.

### 3.3.4 Repetition

Another common type of signal that helps in revealing clause (and other) relations in long texts is repetition. Hoey [35], p.25 believes that repetition is "a way of 'opening out' a sentence so that its lexical uniqueness may be used as the basis for providing further, related information". Repetition is an important clause relation signal that connects sentences and contributes to their interpretation. The repeated items (being positioned in the context of known information) usually act as a framework for the interpretation of the new and later material, which is the material that will receive the reader's attention. Winter believes that many relations can be revealed by the use of repetition. The following example from Hoey [35], p.24 shows the importance of repetition in interpreting clause relations:

> In spite of the hopes and promises of her new allies, Germany remains divided; in spite of strenuous efforts at international virtue, she feels herself morally reviled.

The two halves of the above sentence contain almost similar information. For example, both sequences tell of an unhappy Germany. What is repeated in the above example is '*in spite of* X', '*Germany/she* Y'. There is also grammatical parallelism in what follows the repetitive items, in that X in both halves is a plural noun expressed by the nouns '*hopes*', '*promises*' and '*efforts*" indicating positivity. Y (a predicate) is constituted of the copular verbs '*remains*' and '*feels*' followed by a complement in the form of a past participle '*divided*' and '*reviled*' which describe a state of a regretful or a negative character. The repetition and the parallel grammatical formulae provide the frame for interpreting the relation as one of matching-compatability. Winter believes that the grammatical function of the clause is linked to adjoining clauses. He believes that the commonest type in English is the systematic partial repetition of elements of the clause disguised by a grammatical form. For example, the repetition of '*Germany*' in the above example is substituted by the pronoun '*her*'. Also, repetition is considered to be a very important device in signalling Matching and General-Particular relations.

Hoey recognizes five types that fall under the heading of repetition: simple repetition, complex repetition, substitution, ellipsis, and paraphrase. Simple repetition is achieved by a straightforward repetition of a lexical item. In this type there is no alteration apart from the grammatical features (i.e. plural suffixes and inflexions). The following example from Hoey's [35], p.108 shows this kind of repetition:

> In circumstances such as these, *fluctuations* and *trends* are apt to become confused. How can one tell if an apparent pre-seasonal *fluctuation* is in fact the beginning of an expected *fluctuation* occuring earlier than usual or whether it is evidence of a new *trend*?

In this example, both of the words 'fluctuation' and 'trend' are considered instances of simple repetition. The only alteration that occurs here involves the plural suffix -s. Also, the alteration of verbs from finite to non-finite and vice versa is considered as a simple repetition. Sometimes there is what Hoey calls accidental repetition of certain words which should not be treated as repetition. The following example from Hoey's [35], p.108 shows such an incident:

> No faculty of the mind is more worthy of development than the *reason*. It alone renders the other faculties worth having. The *reason* for this is simple.

In this example, the word *reason* is not a repetition of *reason* mentioned earlier because each one has its own meaning. Cases like this should be carefully treated by the discourse analyst (and ,of course, avoided by the careful writer).

As for complex repetition, it involves a change of grammatical class (i.e. derivation). For example, the noun '*competition*' can be considered as a complex repetition of the verb '*compete*'. Also derivationally -related words in the same class are treated as instances of complex repetition, such as the nouns '*fool*' and '*foolishness*', and adjectives such as '*wise*' and '*unwise*'.

Substitution is the third type of repetition (treated by Halliday and Hasan [31] as a cohesive device). This type of repetition includes substitution with personal

pronouns (he, she, it...etc), demonstrative pronouns (this, that ..etc.), demonstrative adverbs ( there, then...etc.) and the proverb 'do'.

Ellipses or deletion is more prominent in speech than in writing. In this case, usually there is an element/elements missing in the sentence which can be recovered from previously mentioned material.

In the case of paraphrase, Hoey recognizes two types: simple and complex paraphrase. Simple paraphrase occurs when one item can replace the other in a specific context without changing the meaning. Simple paraphrase can be either partial or mutual. It is partial when ' a ' can replace ' b ', but not the other way round. However, when the substitution is capable of operating both ways, then it is called mutual paraphrase (e.g. synonyms).

As for complex paraphrase, it can also be partial or mutual. For example, the words 'afterwards' and 'subsequent' in a certain context can show a particular substitution where the word 'afterwards' can be paraphrased as 'at a subsequent time', but the word 'subsequent' can not be paraphrased using 'afterwards'. Mutual complex paraphrase involves two- way substitution. Words like *big* and *little* are considered as involving complex mutual paraphrase, where the word *big* can be paraphrased as being 'far from little' and *little* as being 'not at all big'. This type of paraphrase in both its types occurs between clauses and sentences just in the same way as between words and phrases.

It should be clear from the discussion of the different signals of clause relation that such signals are considered by analysts to be of great importance because they act as signals for readers/listeners, helping them in understanding discourse organisation and in revealing the different types of clause relations. These signals are important because they turn ambiguous clauses and paragraphs into connected units that refer prospectively and retrospectively to each other. These signals help to make obvious the writer's intended message by signalling the relation between an element in the text and another that is vital to its interpretation.

It is clear that without such signals, it would be very difficult to make sense of various types of connection between ideas. Such signals help to raise the reader's

awareness of the intended message. Still, in a recent study, Tyler [88], adopting Green and Morgan's [89] view, argues that repetition in itself does not establish coherence. This study recognises the importance of establishing an interpretation of key lexical items in a context-specific way, so that when a lexical item is repeated, the risk of arriving at a different interpretation than that intended by the speaker/listener, will be minimized.

Researchers believe that repetition should not be used in written discourse as much as it is used in spoken discourse. Slembrouk [90], after comparing written and spoken discourse, asserts that tautologous utterances frequently occur in speech. He relates this frequent occurrence of repetition to the speaker's/ writer's failure to map new information onto an utterance as a result of difficulties in coming up with a particular lexical item. There are cases, though, where clause relations are not clear because they lack sufficient signals. Therefore, Winter and Hoey believe that the use of paraphrase and questions (i.e. making implicit questions explicit) helps in removing the ambiguities and in clarifying the type of clause relations. These methods of clarifying clause relations will be the concern of the following section.

## 3.4 Methods Used in Clarifying Clause Relations

Hoey [35] and Winter [91],[78],[79],[81] worked on these methods of clarifying clause relations in cases where there are not enough cues to help the reader in understanding the intended message. Although these methods are helpful, they should be carefully used ,especially in the case of paraphrase, because certain paraphrases might be illusive and far from the original intended meaning.

### 3.4.1 Paraphrase

As has been mentioned above, one should be careful when using paraphrases to clarify meaning because of the importance of their contextual effects. Therefore,

it is suggested that if the clauses or the sentences lack overt signals that show their relation, a rewording by the use of signals might be helpful to clarify the kind of relation involved. Rewording here does not mean that one sets out to change the original text, but rather to add to it and make the message clearer to the reader. The only important consideration when rewording is to preserve the original meaning (mainly by keeping as much of the original wording as possible). The following example 'A' of Winter's, which I have used earlier to show the importance of lexical signalling, is used here to show how rewording can help in clarifying the clause relation. This example is used by Hoey [35], p.23 to show how sentence A can be paraphrased into either 'B' or 'C' to clarify the relation involved, which is one of instrument-achievement.

A. Mr. Wilson won many middle-class votes in the election. He appealed to scientists and technologists to support his party.

B. *By* appeal*ing* to scientists and technologists to support his party, Mr. Wilson won many middle-class votes.

C. Mr. Wilson appealed to scientists and technologists to support his party. He, *thereby* won many middle-class votes in the election.

It is clear that with the rewording of the sentence in A, by the addition of either a subordinator (as in B), or by the use of a sequencer (as in C), the relation becomes clear that it is one of instrument-achievement.

There are two types of paraphrase: simple paraphrase and complex paraphrase. The first type occurs when one of two elements can replace the other in a particular context without any change in meaning. The second type, like complex repetition, involves a change in grammatical class and includes both partial and mutual paraphrases. Because the use of this method can sometimes be illusive, the use of questions to clarify clause relations might be preferable.

### 3.4.2 Questions

The process of revealing clause relations by the use of questions is done by transferring monologues into dialogues. The advantage of this method stems from the fact that contextualization of sentences is preserved. Thus, in this method sentences are usually converted into question-answer formula. Hoey [35], pp.27-28 shows how questions can be used in clarifying clause relations. In the following example the genuine two-sentence instance (A) can be analysed or represented in the following quasi-dialogue (B), where the newly inserted question makes explicit the clause relation of the two sentences in the original text.

(A) Mr. Wilson won many middle-class votes in the election. He appealed to scientists and technologists to support his party.

(B) Mr. Wilson won many middle-class votes in the election.

Q. How did he achieve this?

A. He appealed to scientists and technologists to support his party.

As the clauses in the text stand, there is no overt clue to show their relation. Thus, by converting the monologue into a dialogue as is shown in the use of question-answer formula, the clause relation becomes clear and the reader can tell that it is one of instrument-achievement.

Hoey believes that for this method to be useful, a controlled method for converting monologue to dialogue should be applied. Hoey [35], p.28 asserts that this control can be achieved by "restricting the interlocutor's contributions to questions and requests for information". This restriction helps to restrict the insertion of various possibilities into any discourse.

Different types of questions can be used to reveal the monologue relations. Hoey believes that questions can be of different degrees of precision, and can be either broad questions or narrow questions. Broad questions as in the case of using 'how' can be applied to many situations in order to detect answers for almost any discourse. The advantage of questions of this type is that they allow generalisation. Their disadvantage, however, is that they do not provide sufficient distinction between different situations.

Narrow questions, on the other hand, are applied to one situation. They reflect the relationship of sentences to their contexts. These questions are mainly used to spell out exactly the type of relation between two parts of a discourse. Hoey [35], p.29 shows the use of these two types of questions in the same dialogue, as follows.

Mr. Wilson won many middle-class votes in the election.

Q. How (did Mr. Wilson win many middle-class votes in the election)?

A. He appealed to scientists and technologists to support his party.

In the above dialogue the general broad question is shown by the use of 'How' which can stand on its own, while the narrow, specific question is shown by the whole question. Hoey also distinguishes between questions that elicit large passages of discourse (known as high-level questions) and those which detect smaller passage of discourse (known as low-level questions). The use of these categories of different types of questions depends on their convenience to the discourse at hand.

In viewing writing as an interactive process in which the interlocutor is imaginary, Robinson [92] strongly believes that this method of projecting monologues into dialogues can be a very useful strategy for teaching composition. Robinson explored this strategy after he found out that the teaching of models led students to copy chunks of sentences rather than using the organizational structure (schema) of such models. Robinson maintains that teachers of writing should raise their students awareness of the fact that the written sentences are the overt manifestation of the interaction between writer/reader and that, while writing, a writer answers

the reader's implied covert questions. A failure to comprehend this, Robinson argues rightly, will lead to a breakdown of coherence.

## 3.5 Patterns of Discourse Organisation

Because I am interested in analysing students' reports, looking at the different patterns of organising discourse will be of great assistance. Discourse can be organized in different patterns such as the problem-solution pattern, the matching pattern, and the general-particular pattern. The matching pattern will not be discussed here for it has been already discussed under section 3.2 "types of clause relations". A discourse might also consist of a combination of more than one pattern, and typically will. The first pattern to be discussed here is problem-solution since it is the most common one.

### 3.5.1 Problem-Solution Pattern

This pattern can be used in long discourses. Its general constituents are shown by Hoey [35],pp.49-50 with the following example, a very minimal narrative, which shows the pattern clearly.

> I was on sentry duty. (Situation).
>
> I saw the enemy approaching. (Problem/That aspect of Situation which requires response).
>
> I opened fire. (Response)
>
> Sadly this had no effect. (Evaluation of Responses)

I was captured within minutes. (Basis for Evaluation)

This pattern as described here, in what has to be a very pointed example, is of a simple form. Problem-solution pattern can be used as the macro-organization of scientific discourse. A more complex form of problem-solution is known as multi-layering. The multilayering pattern of problem-solution usually occurs when the evaluation is a negative one. There are three different types of multilayering mentioned by Hoey [35]: chained (where each response results in a different problem such as in comedy), spiral (where there are some attempts to solve a problem, but leaving it unsolved), and the most common type, the progressing one (where each response solves part of the problem and leaves part of it requiring solution).

### 3.5.2 General-Particular Pattern

Two patterns can be discussed under this general heading: the generalization-example relation and the preview-detail relation. Generlization-example pattern occurs whenever the discourse can be converted into a dialogue that shows a need for examples, such as using the request '*give me some examples*'. The following example of Hoey's [35], p.136 shows this kind of relation where the first sentence is a generalization and the clauses of the subsequent sentence are examples.

> 1. Maps and architects' models, although both types of iconic model, are very different in a number of important respects. 2.a. For example, a map will only contain those features which are of interest to the person using the map, 2.b. while achitects' models, on the other hand, will be limited to include only those features which are of interest to the person considering employing the architect.

The sequence above is composed of a general element indicated by number 1. It then presents two examples about the meaning of 'different' mentioned in the general statement.

Preview-detail pattern is similar to generalization-example, but instead of projecting discourse into dialogue asking for examples, in this pattern the question is for more details about a certain idea. The details might be of composition (such as what something is made of), structure detail (like giving a description of a certain object) or function detail (by using verbs that describe actions or process). Hoey and Winter [82] believe in the idea of having text models for its useful approach in developing the necessary linguistic skills of our students. They maintain that this approach will enable students to recognise such patterns and thus help them to make appropriate anticipations. Canale [93] believes that learners' discoursal competence is enhanced by the acquisition of such discoursal aspects of language and will eventually lead to better learners' writing. Farghal [46] also believes that students should be exposed to authentic materials that demonstrate various discoursal aspects for their importance in producing well-written compositions.

## 3.6 Methods Used in Analysing Written Discourse

Having discussed the different types of clause relations and their signals that project clause relations, and having investigated the methods used to clarify clause relations and considering the possible patterns of organizing discourse, now some methods of analysing discourse will be discussed. Three methods that are concerned with analysing written texts will be discussed in this section. The first is the evaluative text analysis developed by M. Coulthard [10]. The second one is developed by A. Tadros [94] which focusses on the use of prediction in texts. The third method used in analysing texts is by examining the genre of different texts, a method which is presented and described mainly by Swales [95].

### 3.6.1 Evaluative Text Analysis

Coulthard [10] believes that evaluative text analysis helps the discourse analyst to take into account not simply the differences between texts and their meaning, but also to consider why the quality of one of these texts might be better than

the others. He confirms that just as studies of aphasia and slips of the tongue have set the ground for hypotheses about how language is organized in the brain, a study of the breakdown of badly written texts or inadequate textualization, is equally helpful in finding out the importance of language organisation to successful communication. Similarly, Chapman [87] believes that teachers should evaluate written texts by the extent to which their parts 'hang together'. Furthermore, teachers are able to advise their students how to rearrange their composition so as to improve its cohesion and improve the flow of their ideas. Bolivar [96], p.159, likewise asserts that "evaluation is a primary human activity, and we can not underestimate its role in the creation of discourse".

Bolivar recognizes two kinds of evaluation: the first one is evaluation in language which comprises what we say and do with language while expressing and reporting our experiences, feelings and while controlling others. The second type of evaluation, she calls evaluation in text. This type has a structural role in creating discourse patterns for it allows us to see discourse beginnings and ends. It follows then that teachers know whether one piece of work is more cohesive than another and what alterations might improve it. Based on the systemic functional principle that a clause is the product of three simultaneous semantic processes ( i.e.ideational/representation of experience, interpersonal/interactive exchange and textual/message), Coulthard [10] believes that, in analysing a text, these three different levels of meaning should be applied for they help in revealing not only the meaning of texts, but also show that a text is a series of possible textualizations of the writer's message.

As for analysis at the ideational/representation of experience level, Coulthard [10] believes that the only approach to the writer's ideational representation is through his/her text. Through the writer's text, the discourse analyst can derive the ideational content and then try to alter the text to a preferable or a better one. He maintains that this latter kind of analysis depends mainly on audience and purpose. Halliday [83] asserts that this level encompases two sub-components: the experiential sub-component and the logical sub-component. As for the first one, it handles all types of processes, qualities, participating entities and circumstances.

Halliday [83] believes that one of the vital functions of the clause is its representation of processes. He asserts that, in the clause, it is the system of transitivity that specifies the different types of process recognized in the language and the structure by which they are expressed. This kind of organization consists of the following semantic framework: *the process* itself (i.e. of doing, happening, or identifying/relating which is realised by a verbal group), *participants* in the process (i.e. doer/s and others involved, which is/are realised by a nominal group) and *circumstances* associated with the process (e.g. the location where action takes place, which is realised by an adverbial/prepositional group). These three concepts of semantic categories explain how phenomena of the real world are represented as linguistic structures. The relationships between participants and processes are expressed through the transitivity network. The following example of Halliday's [83], p.102 allows us to clarify these concepts:

*the lion* chased *the tourist* lazily through the bush

In the above example, *the lion* and *the tourist* act as participants in the process and are realised in the noun groups (the italicised ones). The process itself is expressed by a verb group *chased*, and the circumstances associated with the process are expressed by the adverbial group *lazily* and by the prepositional group *through the bush*. Halliday [83] recognizes three types of processes: material process, mental process and relational process.

It can be said that, as EAP teachers, it is important to raise our students' awareness of the importance of attending to the content of the text as a record of what the student-writer brings to it in the form of sentences that express ideas and experiences. The way in which ideas are aligned in order to get a message across to the intended reader is as important as considering the quality of content. This quality is a reflection of the writer's ideational process in which topic development and relevance of content are considered central elements of this aspect.

Interpersonal analysis of the clause as exchange, on the other hand, is involved with the writer's sense of audience. It helps the writer to control the ideational

aspect within certain limits. Morley [97], p.44 believes that this component includes the following functions: to establish and maintain social relations such as greetings; to influence people's behaviour and 'get things done' through request, advice, warning, prohibition etc.; to express the speaker's feelings, attitudes and opinions through expressions such as *probably, unfortunately* etc. Coulthard [38] believes that if the writer does not have a specific audience in mind, it would be very difficult for him/her to make correct ideational formulations. The writer is usually faced with two interpersonal decisions. The first concerns what the writer assumes his intended audience already knows or must know. The second decision concerns what to repeat of what they know. This means that there is ideationally given and new.

Coulthard believes that a failure in interpersonalisation occurs when the writer fails to maintain a consistent imagined reader from sentence to sentence or paragraph to paragraph. Besides its organization as a representation of experience, Halliday argues that the clause is simultanously organized as an event that involves the participation of both writer and audience (reader). During the act of writing, the writer adopts for himself a certain role, and so assigns the role he wishes the reader to adhere to. What is being exchanged can be either of information or goods and services. In the case of information exchange, the semantic function is a proposition, whereas in the case of exchanging goods and services, the semantic function is a proposal. The following examples (a) and (b) from Halliday [83], p.70 show the two kinds of exchange (information and goods exchange respectively):

(a) Is it Tuesday?

(b) Pass the salt!

In the first example (a), the language is the end as well as the means expressed in asking for information, whereas in (b), there is a demand for a service (to pass the salt).

On this semantic level of interpersonal interaction, Halliday [83], p.74 believes that "the Mood is the element that realises the selection of mood in the clause"

and the remainder of the clause is called the residue. The mood consists of a subject (nominal group) and a finite element (verbal group). The finite element expresses tense or modality. Again, the mood selection might be declarative or interrogative or imperative. The following example from Halliday [83], p. 72 shows mood selection:

*The duke has* given away that teapot, *hasn't he*?

In the above example, the italicised parts function as the exponents of mood for each of them consists of subject and finite. The importance of the finite element in the mood stems from the fact that it makes the proposition finite, thus making it arguable by giving it a point of reference in the here and now (i.e. by referring to speaker's judgement by the use of expressions, such as probabilities or obligations).

As for the subject, it is considered to be the mood element in which the success or failure of the proposition is vested. Thus the semantic function of the mood is to mark the clause as an interactive event. The residue of the clause consists of non-finite predicator, complement and adjunct. The following example from Halliday [83], p.78 shows the three functional elements in the residue.

Sister Susie's *sewing shirts for soldiers.*

In the above example, the italicised part is the residue which consists of the non-finite predicate *sewing*, the complement *shirts* and the adjunct *for soldiers.*

Clearly, EAP teachers should emphasise the writer/reader relationship. This can be shown in the purpose/function of the text, through the task that is designed by the teacher. The teacher's anticipation of the task should be met by the student-writer, and the student-writer's awareness of the reader is manifested in the clues and the signals s/he provides in his/her writing.

As for the textual approach focusing on the message, the writer should consider the sequencing of information and ideas in which a multidimensional representation is preferable. Halliday [98] argues that the clause relation is organized textually into two simultanous message lines, one of Theme and Rheme and the

other of Given and New. He asserts that the former presents the information from the speaker's/writer's angle, whereas the latter presents the information from the listener's/reader's angle constructed by speaker/writer. Similarly, Morley [97] believes that the textual level considers both the thematic organization and the information structure of the propositional content of sentences and at the same time considers relationships of cohesion on the intersentential and intrasentential level.

The theme is also considered to function as the starting point of the message in the clause. In other words, it is what the message is concerned with, and so is the point of departure for what the speaker/writer is about to say. Accordingly, the theme is indicated by its position in the clause, namely, at the beginning. The remainder of the message is called the Rheme. This message structure as Theme and Rheme is shown in the following examples from Halliday [83], p.38.

*The duke* has given my aunt that teapot.
*my aunt* has been given that teapot by the duke.
*that teapot* the duke has given to my aunt.

In the above examples, the italicised parts (the subject nominal groups), represent the Themes (i.e. the starting points of the messages of the clauses), and the remainders represent the Rhemes. In the first clause, the meaning of the theme is that 'I'm going to tell you something about the duke', whereas in the second clause, the meaning is centered on 'my aunt' and in the third clause it is focused on 'that teapot'. Thus, the three clauses differ in their choice of theme and accordingly present three different messages.

The theme might consist of a nominal group (as in the above examples, which, as declaratives, have the subject as unmarked theme), an adverbial group or a prepositional group. Examples of the latter two are given in (a) and (b) respectively by Halliday [83], p. 39 as follows:

(a)*very carefully* she put him back on his feet again.

(b)*on Friday night* I go backwards to bed.

These examples are also declarative, but this time with non-subject marked themes. The theme might consist of two or more elements forming a single complex element as in the following example from Halliday [83], p.41:

*The Walrus and the Carpenter* were walking close at hand.

The theme can also occur as an equative element ( in what is sometimes called a pseudo-cleft sentence). This happens when the clause is an identifying one with a thematic nominalisation in it. Thematic equative structure according to Halliday [83], realises two semantic features: it identifies the Theme and equates it with the Rheme , and it adds a semantic component of exclusiveness (i.e. the meaning is 'this and this only'). The following examples from Halliday [83], p.43 show a thematic equative structure(b) as a more marked version of (a):

(a) *a loaf of bread* we need.

(b) *a loaf of bread* is what we need.

In example (a), the theme (the italicised part) carries the meaning of 'we need a loaf of bread among other things', whereas in example (b), the message becomes 'what we need is *only* a loaf of bread'. Halliday argues that expressions beginning with *that's what, that's why* usually have this marked thematic equative structure.

The theme of the clause varies with its mood, in other words, mood variation or selection also affects or determines the unmarked thematic/rhematic characters of major sentence or clause types such as *indicative*, *imperative* or *interrogative*. If it is indicative, it might be either declarative or interrogative. In the case of

being interrogative, it might be either a polar (i.e. yes/no type) or a content interrogative (i.e. Wh-type). Examples of these different moods are shown by Halliday [83], p.44 as follows:

a. (indicative/declarative)

Bears eat honey. Bears don't eat honey.

b. (indicative/interrogative/polar)

Do Bears eat honey?
Don't Bears eat honey?

c. (indicative/interrogative/Wh-)

What eats honey?
What do Bears eat?

d. (imperative)

Eat! Let's eat!

The choice of theme plays an essential part in organizing discourse. The choice of theme constitutes the method of text development. Thus, an analysis of the thematic structure of a text can shed light on its texture and can help us to understand the nature of the writer's underlying concerns.

As for organizing a discourse in terms of information structure (i.e. Given and New), this is done according to what the writer wishes the reader to attend to particularly as information. Morley [97] maintains that information structure in terms of Given and New represents the message block or information unit of a discourse. The New, which forms part of Rheme, is what the reader is invited to attend to, whereas the Given, which includes the Theme, is considered as the part that can be retrieved/recovered either from experience, knowledge or context, and so it acts as a framework for the new information. Halliday [83], p.60 gives two examples explaining the meaning of information structure as follows:

(a) John's father wanted him to *give up* the violin. His teacher persuaded him to *continue.*

(b) *John's father* wanted him to give up the violin. It was *his teacher* who persuaded him to continue.

From the above examples, it can be seen that the writer's focus in (a) is different from that in (b). In (a), the writer's focus is on the contrast between *giving up* and *continuing.* On the other hand, the writer's focus in (b) is on the contrast between *his teacher's attitude* and *his father's* and the fact that John continued stands as Given.

### 3.6.2 The Predictive Approach

Tadros [94],[99],[100] discusses in detail the importance of prediction in making the text more transparent to the reader and thus minimizing the difficulties or the ambiguities involved in arriving at the correct message. Bad writers can be considered bad in part because they fail to fulfil the predictions they set up, or because they fail to set them up in the first place. Tadros believes that prediction is an important concept that can be used for investigating discourse structure. She maintains that in this approach there are usually certain signals that predict the occurence of specific linguistic events.

Tadros asserts that certain signals in texts commit the writer to fulfil the prediction by means of certain linguistic events. For example, when the writer uses the word *define* in his/her sentence, the reader predicts a definition to follow and the prediction of the definition should be fulfilled by the writer. Tadros [100], p.54 maintains that what is being predicted is not a syntactic item " but a discourse item whose fulfilment transcends the boundaries of the sentence". Without supplying sufficient signals in the text, Tadros believes the writer will not be committed to what he/she has written. This of-course will end with the inability of the reader to recognise the commitment.

Tadros differentiates between *prediction*, which involves commitment on the part of the writer, and *anticipation*, which involves guessing by the reader using his/her own common sense, knowledge of the world and his/her familiarity with the subject, and perhaps also in response to certain indefinite or partial prospections by the writer. Tadros [100], p.54 asserts that prediction "is more binding than [a]nticipation; it is more in the nature of a legal contract — where predictive signals are the writer's signature confirming that he is committed to what he has said". Sinclair [25], p.74 argues that sometimes the writer inserts certain signals which allow him, without being committed, to perform a subsequent act. He gives the following example to support his argument.

Fruit drinks usually contain high quantities of sugar.

Here, the word *usually* anticipates, but does not predict, a subsequent contrast with fruit drinks which do not contain high quantities of sugar.

Predictions, according to Tadros, can be classified by means of three units: pair, member and sentence. A pair consists of predictive member and predicted member which fulfils the prediction set up by the predictive member. For Tadros, a member is considered to consist of a sentence or more. She compares these terms of *predictive* and *predicted* to Sinclair's [25] terms of *prospective* and *retrospective* in that predictives are items that look forward, and so are prospective. On the other hand, the fulfilment that is achieved by the predicted discourse is considered as being a retrospective item.

In her research, Tadros discusses six categories of prediction which will be the concern of the following discussion for their usefulness to my analysis later on. These categories are: enumeration, advance labelling, recapitulation, reporting, hypotheticality and question.

### Enumeration

In this category of prediction, the head carries a signal that commits the writer to go on to enumerate with detail. This category is usually realised by the use of numerals which can be either exact and sometimes editorial in the text such as the use of *one, two, three* etc. or inexact such as the use of *a number of, several* etc. Exact numerals reflect the writer's responsibility towards exactness where he has to produce the exact predicted number; however, this responsibility is less when using inexact numerals. Enumeration can also be realised by the use of enumerables and open-set nouns such as using words such as *advantages, functions* and words that refer to objects in the world outside the text. Of course, if information is presented as given in the context, then there is no commitment for the writer to enumerate.

### Advance Labelling

This term refers to a category of prediction in which the writer labels a concept in advance, thus committing himself to produce a discourse item. For example, if the writer uses words such as *define, discuss, distinguish* etc. she/he is expected to (and is committed to) perform acts of definition, discussing and distinguishing. Tadros discusses three types of labelling: one type is realised by linear texts and the other is realised by non-linear texts using tables, graphs etc. The third one predicts these two aspects, those of linear and of non-linear, to be performed by the writer.

### Recapitulation

This kind of prediction refers to a previously mentioned item. Recapitulation acts as an anchor for new information and thus is involved in predicting new information. Examples of phrases that signal recapitulation are *it was mentioned, stated, pointed out above* etc.

### Reporting

In this type of prediction, the writer detaches himself from text and this detachment predicts evaluation of the propositional content. Sinclair [25] asserts that reporting occurs when the writer attributes what he wants to say to someone else, as a way of the writer's evaluating, or refusing to commit himself to, what is said. He believes that evaluation resulting from such reporting is the method by which the author signals a return to averring, that is, what the writer says is taken as what s/he believes in. It is what the factual writer is committed to. Departing from this must be signalled (by attributing or reporting) and a return is also signalled by evaluation.

Reporting can be either direct (i.e. by using specific names to make reference), indirect (by using pronouns as *those/ who*) or reporting adjuncts ( as in using the phrase *in their view*). Reporting can also be factive or non-factive. Factive reporting occurs when the writer uses such verbs as *show, realise, prove* etc. In this case the writer is committed to the truth of the propositions mentioned. In a sense, factive reporting is a special case, since the evaluation that the writer achieves is not non-committed but works by underlining jointness of agreement. On the other hand, non-factive reporting usually occurs when using verbs such as *claim, suggest, think* etc. Here, the writer is not responsible for the truth presented in such propositions because nothing is presupposed about the embedded propositions.

### Hypotheticality

Hypotheticality is like reporting in that the writer detaches himself from the responsibility for the propositions expressed. He detaches himself from the actual world by creating a hypothetical one which predicts generalisation. The writer can indicate hypotheticality by the use of words such as *suppose, assume* etc. By using such words, the reader is warned that he is not in an actual world, but will come to it later on through generalisation. This type of prediction is common in scientific arguments in which invitation is considered as its illocutionary force. The predicted element here is less specific than the predictive one. Certain devices

are used to reflect such a relation. An example of such devices is what is used in hyponymy such as the use of *a/all, common noun/proper noun.*

**Question**

This type also resembles reporting in that the writer detaches himself from the presented proposition (here by posing or putting a question) which ends in evaluation presented in the predicted member. By asking a question, the writer goes through a series of steps to remove the obstacles in the way in order to simplify what is being said to the reader. Thus, with the evaluation, the reader is supposed to be in a state to understand what has been said by the writer.

### 3.6.3 Genre Analysis

Recently, some researchers such as Swales [95] have argued that textual anylysis does not of itself provide a rationale for why genre texts have acquired certain features. Therefore, a new approach for looking at texts has developed; the Genre Analysis approach. Swales [95] believes that genre analysis enhances our understanding of the different ways language is used in discourse communities. He builds his approach upon a pragmatic consideration of enabling both native and non-native speakers and writers to develop their academic communicative competence. Thus, genre approach relies upon linguistic and sociolinguistic theory in clarifying not only the nature of language use, but also in clarifying language learning in an educational context. Three key concepts are attended to by this approach: discourse community, genre, and language -learning task.

Genre-type communicative events consist of texts (spoken/written or a combination), encoding and decoding procedures (tasks) as restrained by text-role, and text environment. Swales maintains that the acquisition of genre skills depends on previous knowledge of the world, giving rise to content and formal schemata, knowledge of prior texts, and experience with appropriate tasks. Consequently, developing the acquisition -promoting text-task activities is considered as an essential way of teaching genre skills. Still, the aspect of commmunicative purpose

is considered the key element around which the task and the activities revolve. It is the communicative purpose that directs the language activities of the discourse community and is the prototypical criterion for genre identity and the primary determinant of task.

Historically, languge analysis for special purposes began in the form of quantitive studies of the linguistic properties of registers (functional varieties) of a language, as in the work of Barber [101] and Halliday, McIntosh and Strevens [102]. Other studies and researchers such as Huddleston [103] were concerned with the occurrence of verb forms in scientific English. Some genre studies focused on tense usage, such as the works of Oster [104], Malcolm [105]. Other studies explored lexical frequency, such as in the studies of Henderson and Hewings [106]. A classification of reporting verbs used in academic text was another area in the premise of genre studies, such as in the works of Thompson and Ye Yiyun [107]. The purpose of such studies was to explore and account for the distributional frequencies in the target language variety in order to offer a basis for prioritizing teaching items in ESP materials.

In her analysis of some medical abstracts, Salager-Meyer [108] found that the rhetorical function of each abstract move shares a close relation with the use of verb tenses and modality. She asserts that three different types of verbs were used as follows. In the case of introducing a topic of discourse or a disagreement, the present perfect was mainly used. The past was used in restating some information about what, how, when, and in discussing some results. As for the third type, the present tense, it was used to refer to the reader's established knowledge. She also found that the use of verb tenses is determined by the communicative function of each medical English text type.

Other ESP researchers were able to show the influence of the communicative purpose for a single spoken/written discourse of a certain type. Hopkins and Dudley Evans [109], for example, show that there are profound differences between sections of research articles. Hasan [110], as well, believes that texts of different genres have different structures. Consequently, there arose an interest in assessing rhetorical purposes, in unfolding information structure, and in considering the

importance of syntactic and lexical choices, making communicative effectiveness more important than stylistic appropriacy in this approach. In the eighties, work in ESP became interested not only in identifying linguistic effects, but also in determinants of those effects, and in dealing with the communicative character of discourse. Genre is used nowadays to refer to a distinctive class of discourse of any type (spoken/written).

Martin [111] believes that genres are realized through registers and registers are realized through language. He [111], p.250 asserts that:

> Genres are how things get done, when language is used to accomplish them. They range from literary to far from literary forms: poems, narrative, expositions, lectures, seminars, recipes, manuals, appointment making...The term genre is used here to embrace each of the linguistically realized activity types which comprise so much of our culture.

He argues that genres control the different ways in which register variables can be put together in a particular society. Genres are also different from register in that, genres have a beginning, a middle, and an end. Couture [112] believes that register only constraints the linguistic levels of lexicogrammar, whereas the restriction of genre goes beyond that to the level of discourse structure. I think Couture's differentiation of both of register and genre is explicit when she explains registers as being the language, for example, of scientific reporting, language of newspaper reporting and the bureaucratic language representing generalized stylistic choices. On the other hand, she considers as genre pieces of discourse, such as research reports, explanations, business reports ..etc. as complete structured texts.

Widdowson [77] believes that scientific writing is structured in terms of certain patterns of rhetorical organization and he argues that this imposes some kind of conformity on members of the scientific community regardless of the language used. Widdowson believes that the teaching of a genre-centered approach helps to focus the student's attention on the rhetorical action and on the organizational and linguistic means as they write. Gosden [113] asserts Davies's [72] comments that if learners are to gain control over a particular genre, they need to be aware

of both the top level and content schemata for the structuring of genre. Besides, a knowledge of lexis and syntactic forms which realize it is as vital. Swales [95] emphasizes the importance of teaching non-native speakers especially the rationale and the conventions of a common type of reseach article introduction, and shows how that can help non-native speakers (NNS) to produce texts that match the reader's formal schemata. Swales presents Painter's argument [95],pp. 90-91 indicating, the importance of teaching models:

> It is necessary for teachers to have a clearly formulated idea as to what kind of writing is being worked towards at a particular point in their programmes. It is not good enough simply to have 'expectations' that children will experiment with a variety of different functional genres, and to provide lists — often ridiculously ambitious — of suggestions of different types. Children do not learn to master a new spoken genre, such as making purchases in a shop or ordering a meal in a restaurant, just by suddenly being expected to do it. If they have not had any occasion to internalize a model of such a text type, whether spoken or written, how can they be expected to construct it?

He goes on to argue that if children are left to do so (i.e. to produce texts without any previous model), they will be restricted to the information they have from outside school, the knowledge of the world. Kress [114] agrees with Painter and condemns those researchers who over-emphasize the concept of 'creativity'/ 'originality' and neglect the teaching of genre. Kress advocates the teaching of text-type and says that people should have enough practice in the genres which will impinge most on their lives. This will direct learners towards understanding the content of the messages to which they are subjected, and provide them with the skills needed to employ, control and organize language for their own purposes. Thus, the prior knowledge that can be achieved by practice plays an important role in the identification and control of genres.

In his article, Marshall [115] discusses the importance of teaching models and argues that an essential task of the EST teacher is to enable students to acquire

the formal schemata required in producing scientific texts. He believes that in teaching structured writing such as report-writing, students' scientific thinking can be promoted. He indicates that the genre-based approach in teaching scientific and technical writing to L2 students can initiate the learning of new concepts and facts, and more importantly it can develop the linguistic and communicative competence which will enable the student to read, write, talk and think as a scientist. Such researchers believe that the competence of structured discourse can be developed in the learner's schemata.

Carrel [116] differentiates between two types of schemata: content schemata and formal schemata. The former deals with general background knowledge, whereas the latter deals with the rhetorical structure of language. It is believed that the formal schemata is the one that identifies, locates, and organizes information in accordance with our general knowledge about the structure of the particular genre. Kintsch and van Dijk [117] believe that the construction of a text will be haphazard if the reader of the text does not have an appropriate formal schemata, the lack of which can lead to an impairment of comprehension.

In a genre-based approach it is important for both students and teachers to realize the variation of text type according to purpose, topic, audience, and channel of communication. Similarly, Hall et al [118], argue that when teaching the schematic structures appropriate to a certain text type, teachers need to stress the relationship between these structures and the basic principles of thought and communication. Tarantino [119], p.58 maintains that for EST courses to be effective, these courses should be:

> shaped to complement not only the linguistic abilities of the participants, but also their cognitive characteristics, their interests, and expectations. This entails decisions on suitability of content and appropriateness of language forms and activities. Language content analysis and description should be made in the light of how the method, procedures, conventions, conceptual networks, beliefs, and values shared by the arbitrary community constrain content, order, and relationships

in scientific argumentation, and how they characterize the specific discourse type.

Similarly, Shaw [120] argues favourably for teaching models, because he believes that a critical imitation of models and the collection of subject-specific list of words and phrases are forms of awareness-raising within the process of writing which can help learners assimilate the conventions of the genre and the register of their subject. Although the issue of genre analysis remains a disputable approach which needs more research to prove its valuable achievements in the educational field, I believe in its validity in teaching, especially in an EAP environment.

## 3.7 Conclusion

It is clear from the discussion in this chapter that it is very important to treat discourse in an interactive way. This interactivity is achieved by studying the different types of clause relations, their signals and the helpful methods that might clarify these clause relations. Such a study of clause relations helps the discourse analyst in decoding different types of discourse in order to arrive at the correct intended meaning.

In addition, it has been shown that the use of the evaluative analysis along with the predictive approach and the need to look at genre can be very useful in understanding written discourse. It has been argued that these methods can be used to mend badly written texts. Furthermore, the results of research so far indicate that an awareness of such methods is very helpful in improving students' writings, especially in EFL classes.

# Chapter 4

# Analyzing Students' Written Reports

## 4.1 Introduction

After having reviewed three main approaches (evaluative text analysis, the predictive approach, and genre analysis), now I can present the approach used in analyzing my data. Obviously the present approach will be informed by those approaches just outlined, as well as the input provided by other researchers and linguists, especially the work of scholars like Halliday and Hasan [31] and Halliday [83].

At the outset, it is essential to note that the present approach considers writing as a communicative activity, perceiving meaning as deriving from the way in which components of texts are arranged and organized in a form of linguistic representation. But because writing is considered as a communicative activity, the arrangements of the text can not simply be a way of packaging and delivering pre-arranged messages. Account has also to be taken of how a reader could or might understand the text, and this is something the writer must pay particular attention to. Similarly, the reader must be aware of the text as a means of interactive communication. Halliday and Martin [121] assert that language should be considered as a resource for meaning rather than as a system of rules. Language should be perceived as a system for construing meaning rather than as a conduit in

and through which to pour thoughts and feelings. Analysts should view language as a meaning-making system. It is important to recognize what the speaker/writer can mean as well as what s/he can say. Meaning is thus more constricted to use and purpose.

As a corollary, in order for a text to be considered from this point of view, its components should meet rules that govern use. This of course varies according to different factors, such as reader/audience and purpose. Thus, the effectiveness of communication in written language can be said to correspond to the degree of congruence between both writer's intention and reader's interpretation. This means that effectiveness can be achieved by the reader's ability to reconstruct the writer's original interactive discourse from the textual clues provided, but of course this in turn means that the writer must attend to his or her text in such a way as to provide clues that promote appropriate interaction and understanding.

It is important to perceive language in terms of solidary relations between text and social context rather than looking at texts as decontexualized structural entities. It is also necessary to recognize that reconstruction strongly depends on the shared knowledge between writer and reader. This knowledge, Widdowson [70] believes, includes: knowledge of linguistic rules and how they are realized by general procedures in accordance with the co-operation principle, knowledge of the subject matter, knowledge of particular conventions of communication.

Sinclair [122] also recognizes - as shared knowledge - factors like the following: subliminal mastery of phraseology, received information about grammar, lexis, strict linguistic inference (including textual inference), and aspects of the culture. Similarly, de Beaugrande [123] asserts that systemic functional analysis involves two aims or levels. The first one is the lower level which can always be arrived at by relating the text to general features of the language and by showing why the text means what it does. The second level is the higher one which shows why the text is valued as effective or not by relating it to its purpose. Consequently, language users or discourse analysts can use such procedures in order to explore the effectiveness of the written communication.

## 4.2 The Present Approach

For the EAP teacher, developing a methodology and a proper approach for the teaching of writing is of great concern. It has been suggested by researchers such as Coulthard [10] that a constructive method for teaching writing can be achieved by deconstructing badly written texts. In my analysis, I will present both badly written texts and well written texts written by JUST students. Those that are well written will vary from the fairly well written to the very well written (although, obviously, the latter category will be attended to least closely). My aim, with those I concentrate on - the bad or the not entirely perfect - will be to discover their weaknesses and to show what differentiates good and bad texts.

The analysis (to begin with) will follow Ventola's and Mauranen's [124] method of analysis which involves the destruction and reconstruction of texts (making minimal reformulation) focusing on the parameters that provide texture for texts. I will of course make any adjustment necessary for special features or peculiarities of my material, and my overall aim is to develop awareness appropriate to my material of the kind of writing produced by JUST students, and to the kind of material that I represent as an EAP teacher.

In their approach, Ventola and Mauranen adopted a textlinguistic approach based on systemic functional linguistics, revealing the importance of this approach in providing help for both writers and teachers. The focus of my approach is going to be on global text organization and such major problematic linguistic phenomena as reference, connectors, thematic patterns, collocation and sentence mood. This emphasis on generic organization in terms of global structures proved to be essential in the production of text, especially in the way such structures are realized through register and discourse choices.

As has been mentioned before, the analyst usually deals with and treats the produced text as a communicative discourse. The analyst, Halliday and Hasan [31] believe, has to explain why and how a text means what it does. The analyst should treat the text considering the important role its linguistic representation

plays in local coherence (e.g. cohesion) and in creating wider coherence. It has been shown that the interpretation of some elements in the discourse is dependent on the presence of other elements (i.e. one presupposes the other). Cohesion can be created through the additional relations within the text which link units of any size, from single words to lengthy passages. Halliday and Martin [121] argue that co-textual relations (cohesion) are to be considered as one of the aspects of intertexuality. They consider textual metafunction as one way of construing meaning of language.

Thus, the analyst can reveal the text as being dynamic by analyzing its cohesive relations among its parts as it unfolds. Cohesion can be either grammatical or lexical. Grammatical cohesion is manifested by the appropriate use of items of reference (i.e. pronouns, demonstratives, definite article and comparatives), substitution, ellipsis and conjunction. Lexical cohesion comprises the appropriate use of repetition, synonymy, antonymy and general features of idiom and collocation.

Ventola and Mauranen [124] studied texts written by Finnish writers and found that their main complaints concerning writing in English, besides their inadequate command of English in general (such as difficulties with articles, prepositions, verb tenses and lexical choices), emerge from difficulties in conveying the intended meaning/message, using the right style and the creation of the right effect. The following section discusses and investigates the first relevant problem in the discourse system, text participants and reference.

### 4.2.1 Reference

Reference involves a group of items that have the property of referring or the property that is more technically known as phoricity. The interpretation of the meaning of such items is usually retrievable from elsewhere in the text. Halliday and Hasan [31] identify three categories of reference items: personals (involving the category of person), demonstratives (involving proximity/location and including, in this category, the definite article) and comparatives (involving identity/similarity). Hasan [125] [126] classifies this relation as a coreference one that holds between linguistic

items which refer to the same entity, and is thus normally realized by the cohesive device of reference. These relations, Hasan asserts, lead to what she calls identity chains.

Reference is considered to be one of the functions that create cohesion in texts. The realization of reference by means of lexicogrammatical items such as proper nouns, proper names and articles, is believed to create cohesive reference chains and to help readers to keep track of referents in texts. One of the ways by which readers come to understand the roles that (for instance) text participants play in texts is through such chains of reference which help readers to perceive the text as a coherent discourse.

In my analysis, I will particularly investigate the properties of the definite article *the*. Halliday and Hasan [31] argue that the definite article has no content. Its function is to be seen as making the item in question (that is, the item accompanied by the article *the*) specific and identifiable by means of the recovery of the necessary information. Greenbaum and Quirk [127] classify the article *the* as a central determiner along with *a, this.*

As with other types of reference, the definite article is encoded either situationally or textually. It could be exophoric or endophoric. If it is exophoric, it can be identifiable in two ways. Firstly, it can be identified when a particular individual is being referred to and identified according to a specific situation. Hallliday and Hasan [31], p.71 show this relation in the following examples.

(a) Don't go; *the* train's coming.

(b) Don't go; *a* train's coming.

In the above sentences, the use of the definite article in (a) gives the meaning of '*the train we're expecting*', while the use of the indefinite article in (b) may give the meaning of warning the addressee to avoid being run over. Halliday and Hasan believe that the article 'the' has this particular property when used in an

immediate situation such as in: *mind* **the** *step; pass* **the** *towel*; etc. Additionally, the referent can be identified using extralinguistic items. This will usually be because the object referred to is the only member of the class, such as '*the sun*'; or because a member might be assumed in the absence of specific indication to the contrary such as '*the baby*', meaning our baby. The second way (still focusing on exophoric uses) in which the definite article can be identified is by referring to something that is a whole class, such as when referring to '*the stars*', or in the case when the individual is considered generically to represent the whole class like Halliday's and Hasan's example [31], p.71 *the child* as in *as the child grows, he learns to be independent.* This type of exophoric reference does not depend on situation and so is called homophoric.

Hawkins [128], p. 439 believes that the definite article is unique because it is:

> associated with existence and uniqueness entailments and with a conventional implicature that there be some pragmatic set....that is mutually manifest to speaker and hearer and within which the existence and uniqueness of the referents hold.

Similarly, Greenbaum and Quirk [127], p.77 assert that the definite article marks a noun phrase as definite. They maintain that the use of the definite article "the" refers "to something which can be identified uniquely in the contextual or general knowledge shared by speaker and hearer". This shared knowledge, they believe, is a knowledge both of the world and of the English grammar. When *the* depends on shared knowledge of the world, it is then referred to as situational reference which might be: immediate situation or larger situation. In the case of immediate situation, the identity of referent is obvious because it is physically present and visible or because situational reference is in mind of speaker/hearer as in Greenbaum's and Quirk's [127], p.78 following example:

> Do you see *the* bird on *the* lower branch?

When *the* is used to refer to a large situation, the identity of referent depends on general knowledge as when saying: the Queen, the Pope etc.

Larger situation also occurs with the use of *the* for sporadic reference and for reference to the body. In sporadic reference, "we promote to institutional status a phenomenon of common experience" as in the following examples introduced by Greenbaum and Quirk [127], p. 78:

....in the paper...

....I'll take the train.

Greenbaum and Quirk believe that the uniqueness of a referent may be recognized not by general knowledge of the world, but by being logically imposed by meaning. Nouns premodified by superlatives, ordinals and similar restrictive items such as *sole* will thus be made logically unique as in the following examples from Greenbaum and Quirk [127], p. 79:

They judged him to be the most original painter.

When is the next flight?

She was the sole surviver.

The source of identification may reside in the text itself, i.e. endophoric reference. In this case, there are two kinds of reference: anaphoric and cataphoric. Halliday and Hasan point out that a definite article can refer to a modifying element within the same nominal group as itself, such as in *the best way to succeed*, where *the* identifies **which** *way*. Here the identifiable item is recovered from the nominal group in which 'the' occurs. Anaphoric reference, the most common type of reference in writing, can be seen in the following example from Halliday and Hasan [31], p.72 which shows this type of reference:

She found herself in a long, low hall which was lit up by a row of lamps hanging from the roof. There were doors all round *the* hall, but they were all locked.

In the above example, the definite article is used in the second sentence to refer to an entity that has been mentioned before. From an example like this, it should be obvious that such reference is usually made by a synonym or near-synonym.

In a text linguistic approach, Halliday [83] asserts the important role of text's linguistic representation in creating cohesion and coherence. In interpreting elements of discourse, it will be clear that this interpretation is dependent on the presence of other elements (i.e. one presupposes the other) and each element is interpreted in relation to its function in the total language system.

The use of a text linguistic approach has proved to be useful in analyzing non-native (NN) writings. Ventola and Mauranen [124], for example, worked on writings done by Finnish scholars and found that the use of this approach helped writers to come to terms with identifying and understanding their problems. Finnish scholars' reaction to such reformulation was more satisfying than the traditional way. Those writers felt the difference in the two approaches. Their writings were first revised using the traditional approach. The traditional approach was not helpful for those Finnish writers writing academic papers because it only dealt with superficial points, such as correcting certain linking devices within sentences, and lexical choice.

Similarly, Farghal [46], after analyzing revisers' work at Yarmouk university dealing with writing English, observed that the emphasis is rather on errors than it is on function. He asserts, for example, that the use of linking words is artificially applied, something which, he thinks, reflects the way such connectors are taught.

In a functional approach, on the other hand, larger units of discourse are considered, and attention is given to how the writer's argument proceeds. Still, most revisors' emphasis seems to be oriented towards errors. This emphasis on error correction raised many complaints from JUST students for they felt that such an approach is not helping them to understand their mistakes, nor to improve their writing.

Ventola and Mauranen [124] found that Finnish writings suffer not only from problems in keeping track of participants but also from realizing a systemic ref-

erential relationships in thematic patterns. They found that the phenomenon of expressing references appropriately is a recurrent problem. In the kind of writing they studied, the problem of the unexpected introduction of already presumed participants is evident. Ventola and Mauranen [124], p.479 show such problems in the following example (the numbering of sentences has, of course, been added to make reference easier in any subsequent discussion):

> (1) Group B.
>
> (2) This group, the most numerous one (26% of the girls in the total sample), obtained an extreme mean value on one variable only:
>
> (3) they spent more time in hobby activities and handicrafts than other girls did.
>
> (4) In addition it may be mentioned that their own life values differed very little from those of adults (as judged by the girls).
>
> (5) They had, apparently, to a greater extent than the other girls, embraced that pattern of life goals which they believed to be characteristic of adults.

In the above example, *other girls* in (3), and *the other girls* in (5) are not clearly referred to in such a way as to show whether the same group, or different groups, of girls are being referred to. From the example, reference here should be made to the girls from the other groups (A, C and D). The two references, here, should be made to refer to the equivalent group, *the other girls.* The presumed reference article *the* should be used to show the reader that the reference is made to the other group of girls in 'A'.

This example reveals the unsystemic and the faulty ways in using evidenced references by Finnish writers. Failure of this kind may be attributed to language interference from Finnish since its system does not show the existence of identical or similar articles. Another problem that emerges from such use of references is related to the problems of formulating thematic patterns. In the quoted extract, the thematic nominal groups in terms of reference are inappropriately used. The

topical themes in the above example include: (2) *this group, the most numerous one (26% of the girls in the total sample)*; (3) *they*; (4) *their own life values*; and (5) *they*. Ventola and Mauranen note that the theme pattern here is a consistent one in that the head of the nominal group in all themes involves a reference directly related to the Group-B-girls.

In (4), however, the theme somehow diverts attention from *the girls* to *life values*, because *life values* is placed in the head position of the thematic nominal group. Ventola and Mauranen believe that such diversion in the thematic pattern slows down the reading process. They assert that the readability of (4) would be more effective if it read something like *The girls differed very little from adults in terms of their life values* and thus realized the theme by a constant reference to the Group-B-girls.

The pattern of Theme-Rheme used by the writer is essential in helping the reader not only in organizing information within paragraphs, but also across paragraph boundaries. An example of the thematic pattern that is used across paragraph boundaries is given by Ventola and Mauranen [124], p.480 as in the beginning of the following paragraphs:

> Group A. The girls in this group hoped more often than others did to obtain a job which had a high social status....
>
> Group B. This group, the most numerous one (26% of the girls in the total sample), obtained an extreme mean value on one variable only...
>
> Group C. The reason given for smoking by girls in this group was usually social...
>
> Group D. The parents of girls in group D had on average a lower socioeconomic status than those of the other girls...

In the extended example from which the above derives, the writer, in the first two paragraphs, has chosen the groups of girls as the point of departure to be discussed in each of his paragraphs. The girls here are selected as unmarked topical themes which are realized by placing the girls in the head position of the nominal groups (*the girls; this group).* In paragraphs (3) and (4), the reader's attention is somehow shifted to *reasons for smoking* and to *the parents* by making them as heads of the themes of these paragraphs. A minor referential change in these last two paragraphs would make the beginnings more fluent to read.

Before looking at examples written by JUST students, it is important at the outset to mention that although I am going to discuss the text first of all focusing on reference, I consistently found it difficult to ignore other problems or to lay them aside. The ideal of dealing with one problem at a time has the risk of rendering an approach to the overall problem incomplete. Understanding any particular difficulty or shortcoming involves taking account, at least to some extent, of other simultanous difficulties and problems.

Text is **never** one thing at a time. It seems to me that the text itself should be treated as a whole unit, as a *gestalt* rather than treating certain problems in isolation. I have found that in order to rewrite certain bits of the discourse and in order to make some sense of it, other issues and problems seem inevitably to get into the picture. This will be evident after looking at those texts I am going to deal with. In trying to rewrite the following text, I will try to confine myself as much as possible to the original text itself and try to change only those problematic items that obstruct reading intelligibility.

The first text that I will look at is taken from a report on Leukemia. The following text on "Classification of Leukemia" has been chosen to discuss the problem of reference. (The text as written by the student, a nineteen year old, in his first year (second semester) doing nursing, has not been altered in any way, apart from numbering the sentences to facilitate later discussion and reference):

(1) As it was mentioned in the introduction, there is more than one type of Leukemia.

(2) The first type is the Acute Leukemia, which is the quick fatal disorder, it lasts only 2-4 months after diagnosis if it was not treated.

(3) Distinguishing such kinds of disorder depends on the large number of immature white blood cells called Blasts.

(4) Acute Leukemia can be also divided into four groups according to the type of white blood cell they cause to be produced fast these groups are the Lymphocytic (ALL), Myelocytic (AML) also called granulocytic (AGL), Monocytic (AMoL), and finally the undifferentiated Leukemia (AUL).

(5) The other type of Leukemia is the Chronic Leukemia, it last longer than the acute after diagnosis, about 2-6 years if not treated.

(6) It can be distinguished by the presence of highly mature white blood cells.

(7) As well as Acute Leukemia, there is more than one group of Chronic Leukemia, they were normal according to the white blood cells they cause to be produced too, these white cells are the Myelocytic, Lymphocyte, and the Monocyte, thus three groups of chronic Leukemia are presented, (CML), (CLL), and (CMoL).

(8) Anyhow, the incident of Leukemia differs according to age and sex, for example, Acute Leukemia is dominant in children especially the (ALL) at 4 years old age.

(9) Acute Leukemia take place in the adulthood, but are rarely seen in teenagers, 60% of adults are develop (MML), in contrast (GML) is really seen in children, but is extensive in mid-age adults.

(10) (CLL) can be seen specifically in older ages, over 50 to 70.

The organizational structure of the above passage reflects the difficulty JUST students have in expanding sentences. It is clear that the writer has difficulty in the overall organization of discourse. Kharma and Hajjaj [9], p.180 believe that

Arab students' essays usually consist of lengthy paragraphs "extending over more than one page, with no apparent organization of any sort". These students also have problems in making clear boundaries between paragraphs. Sa'adeddin [129], p.43 found that the problem of Arab students writing in English emanates from a "mode of literate text development specific to a particular language community, normally utilized to establish a high degree of solidarity between native Arabic text users". He believes that the real problem comes from the negative transfer of this mode of text development to texts written in, or translated into, English, thus disrupting communication between producer (Arab) and receiver (English). He goes on to argue that Arabic is like English in having two modes: aural and visual. To overcome problems in writing in English, it is important for Arab writers to be able to switch the modes and to have a mastery of the visual one over the aural.

The above text shows the different problems this student has which involve reference, relative clause, theme/rheme and overall structure organization. If we try now to strip the text and look at it sentence by sentence we will find that the first striking observation is the use of "more than one type" in the introductory sentence (1). The use of such an expression creates a prediction for the reader that Leukemia is of many types. On reading further into the text, however, it becomes clear that there are two main types, and, furthermore, that these types will now be detailed straightaway - perhaps enumerated - in an orderly progress. Thus, sentence (1) might sound better if it is read something like in (1a):

(1a) There are two main types of Leukemia.

The need for such a change is to provide the reader with the right kind of prediction and a reference for what will follow. The writer should provide certain signals in the text, for such signals help to predict the occurrence of particular linguistic events. The prediction is usually fulfilled in the discourse that follows. Thus, if the writer had written, in his introductory sentence, the topical claim that Leukemia is of two main types, this would create the right kind of prediction which would be fulfilled later under the headings: *the first type* in sentence (2) and *the other*

*type* in sentence (5). Sa'adeddin [129] believes that because participation can be created through the surface text itself, communication can be obstructed if one of the text's elements prevents the receiver from construing the meaning through his cognitive system. Here, a clear taxonomy is needed to orient the reader as to text development.

In sentence (2), the writer proceeds by talking about the first type of Leukemia as his topical theme which fulfills the prediction given in sentence (1). The writer here uses the definite article *the* in introducing Acute Leukemia, but this is obviously an incident of language interference. In Arabic, the definite article *the* would accompany the word Acute. Also, in defining this type of Leukemia, the student's use of the definite article "the" falls short in another way, since an indefinite article would be more appropriate for defining objects when asserting facts. Furthermore, in this second sentence, the writer seems to have a problem with the relative clause and with splicing sentences. If we take sentence (2) on its own:

> (2) The first type is the Acute Leukemia, which is the quick fatal disorder, it lasts only 2-4 months after diagnosis if it was not treated.

There is a better version of what has been written as sentence (2), namely:

> (2a) The first type is Acute Leukemia, which when not treated could be fatal 2-4 months after diagnosis.

Here the writer has presented more than one problem; the first one is the use of the definite article 'the' in introducing the first type of Leukemia by saying "the first type is *the Acute Leukemia*". In this case zero article is needed which functions as an indefinite article. This problem seems to be recurrent in JUST students' writing, and the reason for that is the rich use of the definite article in Arabic and, Shunnaq [130] asserts, the difference of definiteness between Arabic and English. Shunnaq maintains that the rich use of the definite article in Arabic is perhaps the reason for reproducing the same in English texts and it seems that the use of definite article is much more preferred in Arabic than in English. So, it seems that this problem is an interlanguage one.

The second problem in the same sentence (2), seems to be the desire of the writer (and the failure to fulfil this desire) to stress the fact that this kind of disease is fatal. The writer presents this fact inappropriately:

> (2) The first type is Acute Leukemia which is a quick fatal disorder that could last for only 2-4 months after diagnosis if not treated.

A better way to make this fact prominent is by putting it in a separate sentence as follows in (2a):

> (2a) The first type of disease is known as Acute Leukemia. This kind of disease is known to be a fatal disorder which can lead to death within 2-4 months after diagnosis if not treated.

Another problem that is obvious here, is the problem of maintaining a consistent thematic pattern. If we look at the topical themes in the first six sentences, we observe that they are the following ones: (2) The first type; (3) Distinguishing such kinds of disorder; (4) Acute Leukemia; (5) The other type of Leukemia; (6) It. If we consider these topical themes, we find that the writer is slightly diverting from the main topical theme, which is Acute Leukemia. For example, in sentence (3), the writer could have made it easier for the reader to follow the topic. Instead of writing:

> (3) Distinguishing such kinds of disorder depends on the large number of immature white blood cells called Blasts.

the writer could have started his sentence with the same headphrase *this kind of leukemia* and placed it in the head position of the thematic nominal group as in the following (3a):

> (3a) This kind of Leukemia is distinguished by the large number of immature white blood cells; these are called Blasts.

It is easier for the reader to follow the same referential head in the nominal group, so by starting with *this kind of Leukemia*, the reader expects more information about it to follow.

As for sentence (4), the writer is using the same topical theme, but having other problems in structuring his information. He writes:

> (4) Acute Leukemia can be also divided into four groups according to the type of white blood cell they cause to be produced fast these groups are the Lymphocytic (ALL), Myelocytic (AML) also called granulocytic (AGL), Monocytic (AMoL), and finally the undifferentiated Leukemia (AUL).

Here the first problem is the use of the conjunction *also*. There is no need for the use of the additive conjunction here for the writer is not adding information to what has been previously mentioned, but instead getting more specific about a topic that has already been introduced. The writer is introducing the subdivisions of the first type of Leukemia. This sentence suffers from verbosity which is one of the problems JUST students have. The sentence would have been easier to read if it had been something like the following (4a):

> (4a) Acute Leukemia can be divided into four groups depending on the kind of white blood cells rapidly produced.

The use of the adverb *fast* is another problem of register, and more particularly of collocation. In this context with the verb *produced* certain adverbs can be more appropriate, such as: *rapidly*, *abnormally*, and the prefix *over*. Also, a need to have at least two separate sentences is obvious. Indeed if we look at sentences (5) and (7), we can see that the problem of splicing sentences is a recurrent one.

The reader's attention is shifted within sentences from one theme to another which slows down and obstructs the comprehension of the discourse [124]. This problem of joining sentences is a prominent one among JUST students as well as among native speakers of English [131]. Their writings is usually full of "run on"

sentences, which are lengthy, over complex and inflated. Their sentences seem to be flaccid and tedious to read. The importance of keeping the same pattern of Theme/Rheme is to aid the reader in following the organization of information. These patterns are not only important in organizing information between sentences, but also in organizing information across paragraph boundaries. When such a pattern is not maintained, it often means that less attention is also paid to the separation of sentences. This is one explanation for the frequency of sentence splices. Students do not seem to know when and how to splice their information. It seems that they have not been taught about the importance of *New* and *Given*, nor about the logical sequence of the written structure.

As for maintaining the same theme across paragraph boundaries, the writer starts his second paragraph with the use of the connector *anyhow* in sentence (8). The conjunctive *anyhow* is much more typical of speaking than of writing. Here, the meaning of the adversative conjunctive *anyhow* shows dismissal, as if the writer is saying *let's leave that aside, and turn to something else.* Thus, a better transitional phrase might be the following (8a) or (8b):

(8a) As for the incidence of Leukemia, it differs according to age and sex.

(8b) As for the incidence of Leukemia, it is a function of age and sex.

This suggested transitional phrase seems easier to read and better sets the skeleton for the new theme which is *the incident of leukemia.* Thus, a transition is made clearer to the reader now that the writer wants to introduce and deals with the incidence of Leukemia.

It seems that the problem of over-long/over-complex sentences is not confined to Arab students learning EFL. James [132] in his case study of the writing of a Brazilian student, observed this particular problem of over-long/over-complex use of sentences. James notes that such mistakes lead to a breakdown in reading intelligibility. James believes that such mistakes are related to incompatability between the conceptual units and the process of translating these concepts into

written sentences. This problem was clear whenever the conceptual units were internally complex. His student seems to have translated the thought without considering its meaning for the reader. James asserts that what his student needed to overcome this particular problem is a knowledge of translation, not transcribing. His student needed to know, as he puts it, [132], p. 101 "the correspondence between the syntax that characterizes a particular piece of thinking and the syntax of the writing needed to convey it".

James maintains that students, whether native speakers (NS) or non-native speakers (NNS) of English, can overcome this problem if they can communicate one conceptual unit through a number of sentences, which means that they have to re-order some/all of the elements in order to follow a certain sequence in presenting their ideas, paying attention to anaphoric and cohesive devices for maintaining coherence, and finally cutting and/or expanding certain conceptual units. One flaw of these suggestions is the production of oversimplified sentences. The process of writing apparently requires the re-thinking of complex conceptual ideas in order to translate their meaning effectively.

Similarly, Fakhri [133], after having investigated essays written by Arab speakers learning English as a Second Language ( ESL) and others by ESL learners whose mother tongue is not Arabic, but have the same proficiency in English, believes that the problems of writing in English are common to all. He speculates on the possibility that cross-linguistic differences will turn out to be relatively unimportant if one compares texts produced by equally proficient writers, for similar purposes and audiences, and under similar conditions. He argues that it would not be surprising, for instance, to find a scholarly article in Arabic and one in English which, to a large extent, exhibit similar types of rhetorical organization. Nor would it be surprising if both inexperienced native English writers (e.g. freshmen students in composition classes) and English as a Foreign Language (EFL) learners encounter similar organizational problems in their production of acceptable academic texts.

Now if we look at another text by another student, we will find the same problems recurring. The next text that I want to discuss is entitled **Solar Energy**.

This text (the introduction section) is written by a twenty year old student whose major is Agriculture, and in his first year (second semester). Again, nothing has been changed in the text apart from numbering the sentences for easier access.

(1) In the last years, the public has been concerned with the increasing cost of fossil fuels.

(2) There is also some fear about the pollution caused by fossil fuels.

(3) These concerns have increased world wide focus attention on the sun's power to meet society's growing energy needs.

(4) Also, the sun's power was used in the past.

(5) It was used in cooking and for protection.

(6) For example, Archimedes thought about using sun ray to burn the enemy's ships.

(7) After getting an idea about using sun's power in the past and the causes of using it today, we are going to discuss the causes of the change in the way of using the sun's power.

(8) The modern technology and techniques changed the way of using sun's power.

(9) They gave us the ability to change solar energy to electrical energy and store it to use in the night.

(10) The collectors became more efficient and cheaper than previous years.

After having read the above text, I had a feeling that the sentences were jotted down next to each other without any logical connection or reference. It was difficult to create any kind of prediction of what will follow next or how the text is going to unfold. This text is supposed to be part of the introduction about 'solar energy', yet the text structure does not help the reader in getting any idea about how the text is going to develop.

If we look at the text now and analyze it sentence by sentence, we will find out that the first thing that this text needs is an introductory sentence (a thesis sentence) that expresses text development and aids the reader in approaching the text further ahead. The above text deals with the concerns of using fossil fuels as a source of energy and proposing an alternative source, the solar energy. This overall structure of the text should be predictively expressed at the beginning. Instead the writer starts immediately by discussing the different concerns and then the alternative source of energy.

Providing an introductory sentence like the following one helps in creating an expectation of how the text is going to unfold.

> (-1) Recently, the public has expressed concern about the increasing cost and the adverse effects of using fossil fuels as a source of energy, and the search for an alternative source is becoming essential.

This introductory sentence shows the reader simply and explicitly that the writer is going to talk about the concerns of the cost and the adverse effects of using fossil fuels and then the reasons of seeking another source of energy for -that indicated in the title, *Solar Energy.* So, an expectation of what the text is going to be about and its structure becomes more explicit.

Apart from lacking an introductory sentence, the above text has many other organizational problems that deter the reader from properly comprehending the intended messages. The first problem is in sentence (1), where the student writes:

> (1) In the last years, the public has been concerned with the increasing cost of fossil fuels.

Here, the phrase *in the last years*, sounds a literal translation from Arabic into English. Students find it difficult to start off their first sentences. The struggle in writing in English is usually most clearly observed in the introductions and concluding sections of JUST students' writing. A better start here would be by using the adverb *recently* to express what the student wants to say. This also gets

round another shortcoming, that there is a collocational failure in talking of *last years*, rather than *recent* or *previous years*. Thus, sentence (1) would be better if it is written something like:

> (1a) Recently, the public has been concerned with the increasing cost of fossil fuels.

In this way, the sentence sounds more English, and the un-English collocational feel of the prior sentence (1) is removed. Williams [134], believes that one of the problems facing ESP/EFL teacher working in the Arab world is how to help students to write English that sounds like English. But because an introductory sentence has been added to the text, another change in sentence (1) should be made. Sentence (1) can be re-written to focus on the concerns mentioned without specification in the inserted introductory sentence. The introductory sentence and sentence (1) can be written as (-1) and (1) or just as (-1):

> (-1) Recently, a growing concern has been expressed about the increasing cost and the adverse effects of using fossil fuels as a source of energy, and the search for an alternative source is becoming essential. (1a) One of the most important concerns about using fossil fuels is the public's concern about the rapid increase in its cost.

It is now worth mentioning that this new sentence (1a) particularly specifies the importance of the concern mentioned, so that it is not just *one of the concerns* so that is mentioned, but *one of the most important concerns* that the writer can introduce — almost list — other different concerns about using fossil fuels. Sentence (2) then follows as a second concern. It can be re-written as in the following (2a):

> (2) There is also some fear about the pollution caused by fossil fuels.
>
> (2a) Another concern is the fear of pollution caused by the use of such fossil fuels.

In this sentence, the writer also has a problem in using the definite article appropriately. The writer uses the definite article 'the' with the noun 'pollution'. The reason for that is the literal translation from Arabic, for in Arabic the word 'pollution' in this context is accompanied by a definite article. In talking of the *the literal translation* in the previous sentence, I have accidentally illustrated how difficult this point is for Arab speakers. So, it seems that this student is under the disadvantage of translating his thoughts from Arabic into English, keeping the basic Arabic structure. There might be another intention here shown by the use of the definite *the* as in: *fear of the pollution* which strongly advocates a signal to the reader the stand of the writer of writing greenly. However, if the stance of the writer here is of a more balanced one, then the use of the defininte article *the* as in: *fear of pollution*, might be more appropriate. I believe that the writer is trying to express the latter rather than the earlier case, since there is no mention of writing greenly in his preceding text.

As for sentence (3), the writer is struggling again to put down his message, and so his sentence suffers from having an un-English feel about it. Again, the problem involves collocational uncertainty. He writes:

> (3) These concerns have increased world wide focus attention on the sun's power to meet society's growing energy needs.

In this sentence, the student seems to fail in putting his message through and so we carefully have to try to re-construct what that is. I think that he is trying to say something like:

> (3a) This worldwide growing concern about the use of fossil fuels has shifted the attention towards the use of solar energy to meet the increasing need of society.

I believe that sentence (3a) shows what the writer is trying to say but failed to do. What has gone wrong in the original sentence involves: collocation of two synonymous terms, *focus* and *attention*, where one would do, reflecting uncertainty

about the right phrase. In Arabic, though, these two collocational words do occur together in certain contexts. Therefore, this might be a translation problem from his native language, Arabic. (2) Putting everything in one clause with too much nominalization, and so not taking the clause to link this sentence more explicitly with what has gone before. The writer, who, however, has obviously tried to keep the same theme *these concerns*, has failed to make explicit the intention of his message. Also, the writer has some problems in choosing the appropriate words in terms of collocation or diction. For example, the use of 'sun's power' is a bit weak and not scientific or technical in collocation or register. An alternative would be the use of 'solar energy' as suggested in the re-written version in sentence (3a).

As for sentence (4), the use of the conjunction *also* is irrelevant for the writer is not adding any information to what has been said already. The writer has not mentioned anything about solar energy yet. On reading sentence (4), (5) and (6), I believe that the writer wanted to say something about the use of solar energy in the past. His sentences (4), (5) and (6) could be re-written as one sentence as in (4a):

> (4) Also, the sun's power was used in the past. (5) It was used in cooking and for protection. (6) For example, Archimedes thought about using sun ray to burn the enemies ships.
>
> (4a) Although solar power was used in the past, it was mainly used in cooking and for military protection, such as when Archimedes thought of using it to burn the enemy's ships.

The weaknesses in the original sequence of sentences here illustrate my earlier point about it reading like jotted-down and unrelated sentences. Part of this feeling comes from the failure to integrate points relevantly , a function of complex sentences such as illustrated in (4a). The second paragraph of the text seems totally confusing. The overall idea of the second paragraph is the different uses of solar energy, but the way it is presented sounds like Arabic. I think that the first sentence of this paragraph should be omitted and another sentence that deals with

the different uses of the solar energy should be inserted. So, the original sentence (7) can be re-written as (7a) as follows:

> (7) After getting an idea about using sun's power in the past and the causes of using it today, we are going to discuss the causes of the change in the way of using the sun's power.
>
> (7a) Now that we have seen some of the uses of the solar power in the past, we can consider some of the changes in harnessing it.

In this way, the reader knows that the writer is going to talk now about the different present-day uses of solar energy. The writer then should proceed to talking about these different uses, such as in electricity and its day-time storage.

A very typical problem that is recurrent in JUST students' writings involves the appropriate use of conjunction. The problem of the use of such conjunctions can be explored in different ways as will be argued in the following section.

### 4.2.2 Conjunctions

Conjunctions are considered to be cohesive devices that help to create texture in the text. Unlike other componential cohesive devices which help to link back and forth in interpreting discourse, the importance of conjunctions, which are organic cohesive devices, lies in the fact that (1) they link units of discourse together by providing meaning to the established relations because conjunctions have specific meanings and perform their connective function by presupposing the presence of other related elements in the text, and (2), they do so organically, entering the text at the point where a link is established between two otherwise (potentially) separate units.

Halliday and Hasan[31] explain that these devices are not tools to be used for reaching out to the forward or to the preceding text, but are usually used to express a meaning which presupposes the presence of other components in the discourse. They maintain [31], p.227 that the kind of semantic connection these

conjunctions provide is "a specification of the way in which what is to follow is systematically connected to what has gone before". Their function, Nunan [85] asserts, is to signal relationships that can only be fully understood in relation to other parts of the text.

The use of these connectives is important in making explicit the relation between items of discourse; as Lascarides [135] maintains, an essential part of text interpretation involves calculating the relations between the events described. These connectors, Chapman [87] argues, function mainly between pairs of sentences confirming the link and integrating the meanings of these pairs of sentences and thus confirming the meaning of the message. Consequently, these linking devices are considered to facilitate comprehension for they indicate the type of meaning relation intended by the writer. These conjunctions will be the focus of my discussion for their vital importance in clarifying the type of relations between sentences, between parts of sentences, and between larger units of discourse.

In describing conjunction as a cohesive device, the focus, as Halliday and Hasan [31], p.227 put it, is on "the function they have of relating to each other linguistic elements that occur in succession but are not related by other, structural means". Those other means are usually what are categorized as componential means, where conjunctions are classed as organic. Butler [136] uses Hasan's [125] [126] classification of cohesive devices into componential and organic. Cohesive devices such as reference, substitution, ellipsis and lexical cohesion are called componential because they are concerned with parts or components of messages, while conjunctions are termed as organic because of their feature of binding whole messages.

Conjunctions are important in creating texture by providing cohesive ties between sentences which reinforce (rather than involve) the internal structure within sentences. There are four major types of conjunctions identified by Halliday and Hasan [31]. These types include: additive, adversative, causal and temporal. These four major types are further subdivided into different types according to their different functional, semantic and syntactic uses. It is obvious that there is a wide variety of these connective devices in English, but looking at JUST students' writings, it might appear as if there are only a few of them. The most common

connectives in their writing are: *but*, *also*, *on the other hand*, *however* and *therefore* (others are used only sparingly, or much less frequently). This might be related to the way these connectives are taught or to the fact that students feel safer by memorizing only a few of them thinking that they can be used interchangeably.

Linguists believe that these cohesive devices are crucial in producing a cohesive text. Zamel [67], p.22 believes that these connectors make "obvious the thread of meaning the writer is trying to communicate". She maintains, like other researchers, that these connnectors are problematic for English language students. Zamel speculates that one of the reasons for this problem might be the way such links are taught. She asserts that these links are usually categorized according to their function, while the semantic and the syntactic restrictions are usually ignored. Students are usually misled by the erroneous idea that connectors can be used interchangeably.

In teaching the connective adverbs, the transitions as Halliday and Hasan [31] call them, students should be taught the kind of relationship each connector signals between sentences and also between larger units of discourse. The right kind of connector should be used to signal or pick out the right kind of relation, otherwise the reader will be lost and the established prediction will lead the reader to unexpected results. In her research on "those missing links", Zamel [67] found that, on reading her students' writing, she was distracted, either by the inappropriate use of these links, or by their absence. Researchers such as Witte and Faigley [137] point out that these ties are an important property of writing quality and may be essential for making explicit the author's meaning. Such linking words pick out and alert us to the intended relationship as well as preparing us to anticipate what will follow.

The problem of using such links appropriately, Widdowson [138] suspects, has to do with materials and teaching strategies which focus mainly on learning the different conjuncts rather than on how these links make contextually related ideas clear and logical. Reseachers such as Zamel [67], Farghal [46], and James [132], believe that learning when not to use these connectors is as important as learning when to do so. These conjunctives are not always necessary, because there are

other cohesive measures that help in weaving different parts of the text together. Conjunctives are only one category by which cohesion can be achieved. Students should be aware that the excessive use of such signal devices may lead to prose that is artificial and mechanical. The emphasis in teaching such linking words, Raimes [139] believes, should be on the ideas communicated rather than on the overt markers themselves, otherwise the 'glue' rather than the message 'stands out'.

Halliday and Hasan [31] further divide conjunctions into two main functional types: internal (to the communicative situation) and external (of the communicated thesis). By internal relation, they mean the situational events taking place in a communicative incident. By contrast, the external relation is the one that, while dealt with within the communication process, involves the material being communicated and not simply the situation of communication. The following two examples from Halliday and Hasan [31], p.241 show these two kinds of relations, (a) external, and (b) internal:

a. She was never really happy here. So she's leaving.

b. She'll be better off in a new place. - So she's leaving?

In sentence (a) above, there is a causal relation between two events where the first part is a state, not an event, and so the meaning that is given is an external one, that is: "*because she was not happy, she's leaving*". In sentence (b), on the other hand, the causal relation is given within the communication process itself, an internal one. The meaning that the writer is trying to communicate here is that "because you refer to her being about to be in a new place, I conclude she's leaving".

Ventola and Mauranen [124], p.463 also invoke these two kinds of functions and point out that the external conjunctions are the connectors that "are used to make the logical relations between propositions of the text explicit", whereas the internal signals are the ones that "help the reader to grasp the overall organization of the text". A distinction of this kind, between signals connected with the make-up of

the text and signals that operate in the communicative situation is widespread —for example, Sinclairs's [76] distinction between *autonomous* and *interactive* planes. The internal signals are believed to play an important role in pointing out the different stages of the global structure when the text is unfolding.

In analyzing Finnish academic writings, Ventola and Mauranen found that the Finnish writers seem to have acquired certain connectors as their favourites, a situation that I can confirm from my own experience also holds for Arabic students writing English. For example, *however* and *on the other hand* represented the whole category of the relation of adversative and were over-used at the expense of other adversatives. As for the additive relations, Ventola and Mauranen found that the typical additive connector used by the writers they studied was *also*. The tendency for Arabic writers also to rely on this connector is perhaps already clear from examples studied earlier. The causal relations that were expressed by the Finnish writers were mainly done by the use of *thus* and *therefore*. The temporal connectors were rarely used and if so, only on the internal plane for constructing lists: *firstly, secondly,....*

In comparing texts written by native English writers and other texts written by Finns, Ventola and Mauranen found that Finnish writers use fewer connectors and furthermore that these are used infrequently, are fairly locally motivated, and seem somehow haphazard and monotonous. They speculate that the reason behind the problem of using different conjunctions efficiently by the Finnish, might be related to rigid language teaching and the writers' tendency to develop economical strategies for writing. They also presume that learners may have been exposed to only a limited number of connectors and to only a limited set of ways of exploiting the different possible meanings of these connectors and consequently the few connectors used are over-used. They concluded that the skilful use of connectors seems to reflect a generally high proficiency level in English.

It seems that one of the reasons why students do not acquire the right skill in using logical connectors efficiently, might be related to revisers who misunderstand a writer's intentions. Another reason for their inability in using these logical connnectors is that the distinction between external and internal functions of con-

nectors is not clear to Finnish writers. Ventola and Mauranen [124], p.467 give an example from the introduction section of one of the articles that shows this misunderstanding by the reviser. Example number (1) is the writer's own version and example (1a) is the revisor's correction of (1).

> (1) Also the present results provide epidemiological data on various factors relating to the crime of rape, because all medicolegal investigations of victims of sexual assaults in the metropolitan area of Helsinki are examined in the present institute.
>
> (1a) Because all medicolegal investigations of victims of sexual assaults in the metropolitan area of Helsinki are examined in this institute, the present results also provide epidemiological data on various factors relating to the crime of rape.

In the above examples it is clear that the reviser has misunderstood the writer's intentions. The writer is trying to add another point informing the reader of one further factor which emphasized the importance of his study. The writer should have separated the internal connector from the main clause and that is what the reviser should have paid attention to in correcting the report. Instead of looking at the additive *also* as an internal type, the reviser in (1a) interpreted it as an external one and consequently the revision changed the whole information structure of the clause around, making *also* modify the present results, ignoring what the writer is trying to tell the reader. The above examples also reflect how superficial the reviser's responses to written texts were. Research shows that revisers' changes are usually motivated locally, focusing on the clause or the sentence level only, without considering larger units of text or how the writer's argumentation proceeds.

In general, as Ventola and Mauranen [124] as well as Farghal [46] observed in their analyses of revisers' changes, the main emphasis of such changes is on errors which are reflected by the absence or the addition of internal connectors to the corrected texts. It seems that revisers do not pay systematic attention to the use of connectors. They only change incorrectly used connectors without any suggestions of how the global or even the local organization of the text might be

improved. (This sort of narrow attention could lie behind the readiness of students to think that one can rely on only a few connectors *and* that these can be used interchangeably). Consequently the text is left somehow impaired by the lack of full understanding of the intended meaning.

James [132] believes that the internal connectors, which he usefully calls signposts, are problematic to students whose mother tongue is not English. In his case study, he found that the absence of these signposts left him puzzled about what the writer is actually trying to say. James categorizes the connectors into two groups: the first type is the one that gives the reader directions at the micro-level— shown in the connections between sentences or groups of sentences inside the paragraph. The second type is the one that gives the reader directions at the macro-level—showing the relationship between large chunks of discourse and making explicit the argumentation on the global level. It is this second type that causes serious problems and it is the type that is mainly going to be the focus of my analysis of connectors.

The first text that I would like to present for analysis is one that is taken from an introduction section on AIDS, written by a medical student in her first year/ second term. Nothing has been altered in the text apart from numbering the sentences for easy reference. It will be clear that the student has other problems besides the problem of using connectors appropriately and it will be unavoidably necessary for me to deal with those other shortcomings as well. Once again, we see the point that the analyst of writing is dealing with real text, and that makes it inevitable that several things have to be dealt with together. This is exactly what is wrong with the kind of local revision mentioned above, that only one factor is considered at any one time.

(1)This term is about the most recognizable signs of the disease which is called "Acquired Immune Deficiency Syndrome".

(2) But What is Aids?

(3) Aids is an impairment of the body's ability to fight disease.

(4) Acquired means that this disease is neither inherited nor genetic condition.

(5) This disease is depressing the body's immune system and leaves the individual the vulnerable to a wide spectrum of infections.

(6) Aids called syndrome because of the large number of signs and syndromes that defines this disorder.

(7) But the most common opportunistic infections of Aids patients are "pneumocystis carinii" pneumonia and Kaposis sarcoma.

(8) However, the creature which most proofs indicate that it is responsible for causing Aids is called T-cell Leukemia virus HTLV-III.

(9) This human transmitted by sexual contact, blood transfusion and intravenous needles.

(10) The following lines will illustrate the history of this dangerous disease firstly.

(11) After that, the people who are at risk of this disease.

(12) Thirdly, comes the most recognizable signs and symptoms of Aids to be mentioned one by one.

(13) Finally, the ways with which such a disease may be prevented at least or destroyed for ever will be provided in order to make the reputation of this disease just a dream.

(14) Hopefully this short report gives the reader useful information.

In my discussion of conjunctions, I would prefer to refer to them as *logical connectors*. The reason for this preference over a term like *conjunctions* is because I believe that these conjunctions facilitate the logical sequence of argumentation in discourse. In addition, the word *logical* means reasoning and so shows the reasoning behind any unit of discourse. The word connector is as important because it stands for the relation between the connected units. So, a term like *logical connectors* reflects the reason behind connecting items of discourse and so the

meaning becomes more explicit. Similarly, Nunan [85] refers to these links as logical connectors, asserting their importance in developing the logical thinking.

In the above extract, it is obvious that the student has many problems and at times it seems that the use of certain expressions causes disruption and so her communication is somehow impeded. If we start with sentence (1), we can see that the writer has a referential problem here by using the demonstrative *this* at the very beginning of her introduction. Sentence (1) as written by the student is very disrupting:

> (1) This term is about the most recognizable signs of the disease which is called "Acquired Immune Deficiency Syndrome".

To start with a referential item like *this* is obviously confusing because *this* harks back to something that has been mentioned before and can not be used at the beginning of the sentence. When using a demonstrative like *this*, the reader expects to retrieve the relevant information from context and here it would be retrieved from something that has been mentioned before. Therefore the use of the reference here at the very beginning does not help the reader at all and makes it more difficult to find out what the writer is trying to say. A better way of introducing the subject, I believe, might be as in (1a):

> (1a) Acquired Immune Deficiency Syndrome, known as AIDS, has distinctive signs and symptoms.

By re-writing sentence (1) as (1a), the reader will immediately know what the writer is going to talk about and what is her focus in the following discussion. The writer then proceeds with sentence (2), which is in an interrogative form, starting it with the adversative *But*. Sentences of this type are more typical of spoken language rather than written language. In addition, the use of the addversative *but*, according to Hatch and Long [140], p. 8, "serves as a transition marking the denial of expectations established in the previous [discourse]", Consequently, I think that this sentence could be omitted and the text could proceed immediately with sentence (3).

In sentences (3) and (5), the writer makes the same mistake by saying *the body's ability* and *the body's immune system.* The correct way of referring to such meanings would be something like: *the ability of the body* and *the immunity of the body* because the word body is a general form. Sentences (3) and (5) can be rewritten as the following versions of (3a) and (5a) (and with altered verb group forms in (5a)):

> (3a) AIDS is an impairment of the ability of the body to fight against disease.
>
> (5a) This disease depresses the immunity of the body (or: the immune system of the body), leaving the individual vulnerable to a wide spectrum of infections.

In the original version of sentence (5), the writer uses an additive connector to link the internal clauses within the sentence. Such a use of *and* in (5) reflects the difficulty of using signals even within sentences:

> (5) This disease is depressing the body's immune system *and* leaves the individual the vulnerable to a wide spectrum of infections.

I have already suggested an alteration for that link in version (5a) by using the participle *leaving* instead of using the additive connector *and.* Here, in the original sentence (5), there is no need for an additive because the relation is a causal one which can be expressed by the use of the participle *leaving* as suggested in (5a). In her research on "linking ideas with *and*", Lazaraton [141] found that *and* has important functions in both speaking and writing skills. Similarly, Celce-Murcia [142] asserts the importance of this linking device and so carried out a contextual analysis in order to explore the semantic, syntactic and the discourse properties of this conjunction *and.* Halliday and Hasan [31] point out that clauses coordinated by *and* are structurally related in different ways. They assert that coordinated clauses are freely ordered, in that reversing their order does not change their meaning. Furthermore, *and* as a coordinate device does not have any semantic force, for it is mainly a structural signal.

An important point mentioned by Lazaraton is that coordinated clauses should be parallel in their structure. Parallel structure as defined by Celce-Murcia and Larsen-Freeman [143], p.298 is "the same sequence of syntactic constituents and semantically similar lexical items". Besides the clausal coordination, there is the clausal conjunction use of *and*. In the case of its use as a clausal conjunction, there is no equal structural relationship between the clauses. A similar study has been carried out by Schiffrin [144][145] that shows the primary structural function of *and* in the process of building a text, in coordinating ideas into the text and in marking the speaker's continuation of what has preceded. This kind of distinction is essential to be pointed out to students so that they would be aware of the different functions of *and*.

The use of the adversative conjunction *But* at the beginning of sentence (7) reflects the difficulty of using such links by Arab students. It is obvious that in this extract, the most common logical connectors are the adversative ones including: *but* and *however*, and the temporal ones including: *after that, thirdly* and *finally*. It is clear that the use of these links in this extract shows how little the writer knows about the appropriate way of using these logical connectors. The way the writer is using them seems so artificial, as if she has just fitted them randomly in or between the sentences.

To start with, the adversative conjunction in sentence (7), is wrongly used for the writer is not contrasting what she is saying in (7) with any of what has been mentioned before. The same problem arises in sentence (8), where the writer uses the adversative *however* inappropriately. In sentence (8), I think, the writer could have proceeded to talk about the main virus that causes AIDS without any need for a connector here. It seems that the student has been under a lot of pressure about using logical connectors and it seems that the emphasis of these connectors is over-done, so that the student overuses these conjunctions and uses them inappropriately, which has led to disruption in communication.

Sentence (8) suffers from more than one problem. Besides the problem of using the conjunction appropriately, the sentence has problems in collocation, verbosity

and the construction (and use) of the relative clause. A better version of sentence (8) could be the following (8a):

> (8) However, the creature which most proofs indicate that it is resposible for causing Aids is called T-cell Leukemia virus HTLV-III.
>
> (8a) The virus that is mostly responsible for AIDS is called T-cell Leukemia virus HTLV-III.

The same kind of artificiality is observed in sentences (10), (11), (12), and (13) in using conjunctions. This might be related to the fact that students may be exposed only to a list of some of these conjunctions without knowing the use of each one of them. The teaching of these conjunctions should be done in context and the differences between the different adversatives, for example, should be illustrated either by examining the students' own mistakes or by concocting examples for this particular purpose.

Sentences (10), (11) and (12) can be altered to make them more natural as suggested in the following versions (10a), (11a) and (12a):

> (10) The following lines will illustrate the history of this dangerous disease firstly. (11) After that, the people who are at risk of this disease. (12) Thirdly, comes the most recognizable signs and symptoms of Aids to be mentioned one by one.
>
> (10a) In the following section, I will present the history of this dangerous disease. (11a) After that, people at risk of this disease will be discussed. (12a) This section will then be followed by a discussion of the most recognizable signs and symptoms of AIDS.

As has been mentioned earlier the use of these connectors is important to make the meaning more explicit, but to know when not to use them is just as important. The whole net of cohesive devices should be taught and students' awareness about these devices should be enhanced. The overuse of these connectors can be as disrupting as their absence, if not more so.

Another problem that appears in the above extract on AIDS is paragraphing. The extract, I believe, can (or should) be divided into two distinct paragraphs. The first paragraph includes the definition of AIDS and the virus that causes it and continues until the end of sentence (9). The second paragraph can then be easily separated from the rest, since it deals with the future sections of the report. This problem seems to be as recurrent as the previously mentioned problems.

The next text that I would like to examine, is also on the topic of AIDS but this time it is part of the conclusion section. This extract is from a report written by a second year student, twenty years old, in his second term. The numbering of the sentences is the only thing that has been added to the text, again for easy reference.

> (1) Based on the information mentioned before we find that only the people who are in certain groups are at risk of catching such a disease.
>
> (2) These groups are homosexuals, bisexuals, intravenous drug users, hetrosexual contacts of individuals with Aid and others.
>
> (3) Also these groups are found to have a certain signs and symptoms which indicate this disease.
>
> (4) However, by extensive education and avoiding unlegal sexual contacts we can decrease this horrible disease but by following our religious principles we can destroy this disease for ever.

The above text again suffers from many problems. These problems include the inappropriate use of the following: reference, collocation, conjunctions, and interrelating cultural values with scientific facts. If we start analyzing the text, we can see that problems appear right from the beginning. For example, in sentence (1), there are problems of reference and of collocation. The student uses a definite article with the generic noun *people*. Furthermore, this noun *people* is subsequently specified by the restrictive relative clause *who are in certain groups*, and has already been focussed by the preceded *only*. These are enough to make any use of *the* unnecessary. As mentioned before, this kind of referential problem can be a

serious one. The choice of appropriate words to introduce the first sentence sounds like a literal translation from Arabic. Also, the student has problems of collocation in using the word *catch* in this context. The following (1a), could possibly be a better rendering of the original version (1):

> (1) Based on the information mentioned before we find that only the people who are in certain groups are at risk of catching such a disease.
>
> (1a) Based on the previous discussion, it can be concluded that only certain groups of people can be at risk of getting the disease.

The writer uses the word *catch* to refer to AIDS, which is wrong in this context. It can be used to talk about cold (say, *catch a cold*), but not AIDS because its transmission is not as easy as *catching a cold.*

As for sentences (3) and (4), the problem of using appropriate conjunctions is clear. In sentence (3), the writer uses the additive conjunction *also* inappropriately. The writer in sentence (3) is not adding information to what has been mentioned before, but is proceeding by giving a new set of information, in saying that such groups usually have similar signs and symptoms of AIDS. So, the use of the additive conjunction *also* here is done haphazardly, and probably to please the teacher by showing that the student can use what he has learnt. The same problem occurs in sentence (4) where the writer starts his sentence with an unnecessary adversative conjunction *however.* The student is also bringing his cultural values into his scientific conclusions. A possible alteration of both sentences (3) and (4) might be the following suggestions in (3a) and (4a):

> (3) Also these groups are found to have a certain signs and symptoms which indicate this disease. (4) However, by extensive education and avoiding unlegal sexual contacts we can decrease this horrible disease but by following our religious principles we can destroy this disease for ever.
>
> (3a) These groups of people seems to share the same signs and symptoms. (4a) It is only by extensive education, by refraining from un-

lawful relations, and by following the rules of religion, that we can minimize and probably prevent the incidence of AIDS.

It is clear from the alterations in (3a) and (4a) that there is no need for conjunctions here. Cohesion is created here by the use of other devices such as reference in sentence (3a), and in (4a) organically or structurally by listing the ways of preventing AIDS.

In sentence (4), there are collocational difficulties, such as the use of *avoiding unlegal* in referring to relations, *destroy* in referring to disease. *Avoiding* in this context is inappropriate because he is referring to relations as if he is talking about a disease or an accident that can be avoided. A better collocation A here would be *refraining from unlawful relations* as has been suggested in the alteration in (4a). Again, the use of the word *destroy* to collocate with disease is inappropriate and reflects a literal translation from Arabic to English. It seems that the student has looked it up in an English/Arabic dictionary which gives the meaning of *eradicate*, so he uses this word immediately without checking its different uses in different contexts. So, appropriate collocation with the word disease might be *eradicated*, *prevented*, or *minimized.*

It is clear from sentence (4) in the above text that the student is bringing his/her own cultural/ religious background to the discussion. In researching the influence of cultural background on language and thought, Dudley-Evans and Swales [146] point out that, in the Middle East, Koranic attitudes influence greatly the way in which thought and language are approached by students. Accordingly, Holliday [147] believes that an investigation of the identity and behaviour of an individual student, in an English as a foreign or second language class, in terms of a whole complex of interlocking and/or overlapping cultural influences, is very important in the teaching environment. Another recurrent difficulty which has been already pointed out in almost all the previous examples is collocation which will be the focus of the following section.

### 4.2.3 Collocation

As has been remarked earlier in chapter three, section 3.3.3, collocation can be defined as the association of lexical items that regularly co-occur. This aspect of lexical choice is considered by researchers such as Halliday and Hasan [31], Nunan [85] and Zughoul [86] to be one of the most problematic areas for both students and analysts. Chapman believes that one of the reasons for this difficulty for the analyst is that the habitual association of words is mainly a semantic one between lexical items and not between classes of words. Similarly, Nunan [85], p.30 asserts that "[t]he problems arise because collocation is expressed through open rather closed class items...[and because] there is no limit to the items that can be used to express collocation". As has been mentioned in Chapter 2 section 2, an open system, according to Halliday, includes content words to which one can add many words. By contrast, a closed system is a system that embodies grammatical words, such as articles, determiners, pronouns, conjuncts and some finite verbs, to which no other words can be added. If we consider the following examples (1) and (2)

(1) The girl was in trouble, and so Jamie rushed to help her.

(2) The woman was in trouble, and so Jamie rushed to help her.

We can see that the word *girl*, for example, belongs to a paradigmatic open system where so many other words can be used to replace it, such as *woman, boy, lady* etc. as is exemplified in example (2). The conjunction *and so*, on the other hand, belongs to a closed system where only a few alternatives can substitute it.

Like other researchers, Nunan believes that in investigating collocation, it would be difficult to set up lists of regularly co-occuring words and phrases. Another problem of analyzing collocation is that many lexical relations are not only text-bound, but context-bound as well.

It is assumed that the background knowledge of the reader plays a more important role in the perception of lexical relationships than in the perception of other types of cohesion. Collocational patterns, for example, can only be understood and perceived by someone who has knowledge about the subject at hand (i.e. by

someone who is familiar with the content of the text). This text-bound nature of most of the lexical relations, and the role of the language user in understanding these lexical relations, both invoke a problem for the linguist in trying to provide a semantic account of lexical cohesion. In investigating cohesive devices, Freebody and Anderson [148] believe that the difficulty in cohesion lies in the nature of the textual relationships themselves rather than in the cohesive devices that mark this information.

In discussing naturalness in language, Sinclair [122] draws attention to a number of categories which can be used to measure the degree to which—and the ways in which—language can fail to be natural. Two of these categories, neutrality and idiomaticity, have to do with ways in which a mutual expectation between words and expressions, and also between expressions and the structure they occur in, are considered to be of great importance in measuring the extent of the naturalness of the language. These relations of mutual expectation are central to the idea of collocation. Biber [149] believes that such lexical items are perhaps more profitably considered as conventional in terms of the notion of co-occurrence of features. That is, rather than the occurrence or non-occurrence of single lexical or syntactic items, the associated occurrence (and reccurrence) of items together may in fact be what signals the identity of text types.

This feature of collocation seems to be one of the problems facing not only JUST students but also other Arab students, and indeed students learning English as a Foreign Language (EFL) in general. In investigating the typical errors made by Arab students in writing/speaking English on sentence level, Kharma and Hajjaj [9], and Zughoul [86], point out that one of the problems Arab students have is collocation. Kharma and Hajjaj assert that each language seems to have its own collocation patterns regardless of some of the similarities that some languages have. Such collocation problems, they found, occur mainly in the choice of lexis, phrasal verbs and in prepositional phrases.

The problem of collocation among JUST students as investigated in my work became clearer after they were given, in 1994, a cloze test on collocation in which they revealed the difficulty of coming up with the right expressions. An example

of such difficulty is shown in the report of one of the students on Alcoholism "The causes of Alcohol drinking". The text (which follows below) is written by a second year student of twenty years old, studying nursing. The original text is quoted without any changes apart from numbering the sentences for easy reference.

> (1) Occasions and celebrations considered the main causes of alcohol drinking.
>
> (2) Occasions are divided into two major types: social occasions and religious occasions.
>
> (3) The first type contains the family gatherings, card playing games and parties, while the second type will be discussed further more in the prevention of alcohol drinking.
>
> (4) Social drinking is based primarily on the Alcohol's ability to tranquilize after exposure to any kind of stress.
>
> (5) In addition, teenagers are drawn to drink as a means of testing their ability to challenge the adult's authority...
>
> (6) The most common phenomenon that most drunkard feel is the flushing of skin and the sensation of warmth that no longer disappear.

On reading the above text, it becomes obvious that the student has many problems in organizing her information. The text is deformed in terms of syntax, in its lack of an introductory thesis statement, the use of correct linking words and in collocation. It is clear that the student is familiar with some of the scientific words such as *tranquilize* in sentence (4) and *phenomenon* in sentence (6). By looking at this text, it becomes clear that the knowledge of such words is not enough. It looks as if the student has memorized such words without learning the appropriate, natural style of their use. Her command of English shows inadequate knowledge of lexis.

I believe that the reason for such a problem of choice of lexis might be related to techniques of teaching. It seems that language teachers follow the advice of

some linguists who advocate the use of vocabulary lists such as what Zughoul [86] suggests. It is true that these lists might enhance the spectrum of vocabularies, but still the correct, natural use of such vocabularies needs to be implemented. Sonaiya [150] rejects the use of such lists in the learning/teaching programmes, for she believes that such lists do not teach the difference in meaning between two semantically related items of the target language that is being acquired. Martin [151] also believes that most of the adults' mistakes are semantic/content-oriented, not form-oriented as suggested by Zimmermann [152]. In her research, Sonaiya investigates lexis in terms of the semantic relations that exist among lexical items. She [150], p.274 believes that

> [t]he primary task in vocabulary acquisition is seen as one involving a continous refining of meaning and readjustment of boundaries between lexical items that have already been acquired and subsequent items that are encountered that are semantically related to the acquired ones.

In her doctoral thesis, Sonaiya [153] found that the reason behind most of the lexical errors among adults' language lies in the lack of knowlege about how two or more semantically related items are differentiated. Ballmer and Brennenstuhl [154], p.419 believe that

> [to] know what sentences mean is to know how they are structured, and how this structure is used to interpret the sentences with respect to the words constituting it. To know the meaning of the single words is to know their semantic relations: their similarity, their dissimilarity, their implications, their presuppositions. In order to learn, use and teach a language, the ability to judge such relations is basic.

Thus, it is clear that the teaching of the differences between closely related items is essential in the learning environment in order to acquire a natural way of using them, and so that the learner's understanding of those lexical items increases by relating them to other words that share their meaning. This method of teaching

lexis is assumed to better steer the learner's competence towards that of native speakers of that language.

Now if we study the text on "causes of alcohol drinking", we will find that the above argument holds true. If we take the title to start with, we can see that it does not sound English. I think what the writer is discussing in her paragraph is *Abuse of Alcohol in the Western World.* Choosing a suitable title for such a report (or any piece of writing) is very important for it helps the reader in predicting the global topic of that piece of writing. Now if we look at the text and take (for example) sentence (3) we will see that the student writes:

> (3) The first type contains the family gatherings, card playing games and parties, while the second type will be discussed further more in the prevention of alcohol drinking.

The verb *contains*, I believe, is an interlanguage problem. The correct predicted verb to accompany the noun phrase *the first type* is the phrasal verb *consists of* or *comprises.* This phrasal verb gives the prediction to the reader that a list is coming immediately. So, by rewriting sentence (3) as in sentence (3a), the prediction becomes clearer for it is the natural way of introducing a list of certain groups.

> (3a) The first type comprises recreation.

It is clear that this kind of problem has a deterrent effect on reading intelligibility in that it slows down the reading process.

The same problem arises again in sentence (4) in using words such as *ability* and *tranquilize.* The noun *ability* in this context is lexically inappropriate, because usually it accompanies living objects. The word *alcohol* can be expected to come along with certain collocating words such as *effects, causes, capacity, tendency* or *results in.* Furthermore, in sentence (4), the student uses the word *tranquilize* to talk about the effect of alcohol. The word tranquilize is mainly used along with drugs, usually the ones that are deliberately administered to have this effect, and

its use in this context is another case of interlanguage failure. Sentence (4) as written by the student would not sound English to the native ear.

> (4) Social drinking is based primarily on the Alcohol's ability to tranquilize after exposure to any kind of stress.

What the student might want to say, I believe, is something like in (4a):

> (4a) Social drinking is based primarily on the fact that alcohol is a depressant agent.

The reason for suspecting that the student wants to express *depressant* instead of, for example, *stimulant* is due to her use of the word *tranquilize* which indicates loss of consiousness. It seems that the student wants to emphasise the drunkeness stage here. Although, in the case of social drinking, it is the stimulant effect that makes people drink. It seems that the cultural values for this student are overcoming her right judgement on the reasons and the effects of alcohol drinking. Another problem of collocation in this text is in sentence (6) where the student uses the word *phenomenon* inappropriately:

> (6) The most common phenomenon that most drunkard feel is the flushing of skin and the sensation of warmth that no longer disappear.

The choice of this lexical item *phenomenon* in this context leaves the reader at once in a quandary. I believe that the student here intends to say *sensation.* Sentence (6a) can be a possible reformulation of what has been written in (6) above:

> (6a) The most common reaction/effect that most alcohol consumers encounter is probably a glow of the skin which gives them a long lasting warm sensation.

Investigating such problems in an EFL classes can help the teacher to better understand the students' problems and enable them to improve their writing. It

becomes clear that collocation should be taught in a contextualized way. Situational analysis has been advocated by a number of linguists for its great value and for its positive outcome. Mohan [155], for example, supports Halliday's situational analysis for two reasons. He believes that this kind of analysis helps us to understand the role of language in education. Furthermore, he asserts that it helps us to understand the interplay of situation and text. Lotfipour-Saedi [156] argues in his paper on "Textual strategies and their cognitive effect" that no textual element can operate effectively in isolation, without considering the other textual units and the text as a whole.

The other text that I would like to examine in terms of collocation is a section on Misuse and Abuse of Drugs from a report on "Drugs". This report is written by a pharmacy student of nineteen years old in his first year of study, second term. Again, nothing has been changed in the text apart from numbering the sentences for easy reference.

(1) Misuse and abuse of drug is a real and serious problem face our healthy societies and threat the life of some people to danger, but what is the drug abuse?

(2) Abuse means wrong or bad use of something.

(3) For example, the herioin addiction is guilty of drug abuse, people who are used to take drugs are suffer from a problem which the societies must not ignore it is importance, we do not say that drugs has no advantages, but it is disadvantages sometimes lead to death.

(4) For example, addiction is the main consequence of misuse of drugs, which result by taking some kinds of drugs which cause a case which called addiction.

(5) In fact addicts take these drugs so as to help them selves to "get going" as they say.

(6) Heroin and other drugs which cause addiction has a bad effect on mind, patients may have distorted images of objects, or they may

see objects that do not exist, they may experience sensations with no external cause.

(7) Although out of touch with reality, also they may feel that they are having real and exciting experience.

(8) This an example of the effect of some kinds of drugs in the human.

(9) Also the use of mind-affecting drugs may produce large swings in moods and emotions, there is usually no loss of consciousness, but poor judgment and the loss of normal ability to see cause and effect relationship may results.

(10) For example, some people may feel that they can fly or walk on water and try to do so, and sometimes the results are fatal.

As in the other previous texts, this text suffers from a number of problems which deter the reader and impair reading intelligibility. The above text suffers from other problems which affect its organization, such as reference, syntax, collocation, sentencing.

Looking at the title of this report, we can see that the student has problems right from the beginning. The title "Misuse and Abuse of Drugs" is not appropriate in English and only one of the expressions needs to be used to indicate the topic of the report. So, a title like "Drug Abuse" or "Misuse of Drugs" is clear enough as a title. It seems that Arabic is one of the languages that has more tolerance towards repetition or redundancy than English [157].

The problem of collocation is a recurrent one as has been seen from the previous texts and in this one as well. If we examine sentence (1), we can see that the writer is using a lot of inappropriate collocations in the form of synonyms in his writing. He uses *misuse* and *abuse*, *real* and *serious*, and *threat* and *danger*. A possible alteration of this sentence is the following (1a):

(1) Misuse and abuse of drug is a real and serious problem face our healthy societies and threaten the life of some people to danger, but what is the drug abuse?

(1a) Drug abuse is a serious problem facing our societies and threatening the lives of some people.

The use of these various collocations as being synonyms reflects the students ingnorance and his limited knowledge of the differences between these words and their functions. This means that there should be more emphasis on the teaching of various collocational items and their different functions in different contexts. In the original sentence (1), the writer poses the question *what is drug abuse*? after mentioning its danger to society and to people. I believe that such an explanation, if there is a need for it, should be given right at the beginning so as to make it easier for the reader to follow.

If we turn now to sentence (2), we find that the explanation of the theme *abuse* is over-simplified as if the text is written for school students. I think the writer could have simply written something like in (2a):

(2) Abuse means wrong or bad use of something.

(2a) Abuse, in general, is the misuse and illegal use of something.

I believe this sentence (2a) could be placed at the very beginning as sentence (1) so as to orient the reader right from the beginning about what the writer intends to discuss in the later sentences.

As for sentence (3), the student is obviously struggling to find the right word/s, and has other problems such as splicing sentences, and writing English that sounds English. This sentence sounds so much like Arabic to me; one that might be suitable for informal conversation. The use of the word *guilty* in this context is one of the indications that shows his struggle. The student is struggling to find the correct expression, but fails to do so. The choice of the word *guilty* is collocationally inappropriate, but I do not think that it is an interlanguage one. It is, I believe, due to insufficient knowledge and insufficient background reading on the topic. Instead of using *guilty* here, another more appropriate expression can be used, such as *responsible*. Another possibility, here, might be that the student wants to address *addicts*. In this case, the use of *guilty* would be appropriate.

Again, the student is making another misuse when he uses the word *importance* to talk about the seriousness of the problem. This choice is one of interlanguage. He wants probably to say *seriousness.* Sentence (3) could be written differently and probably more appropriately as follows in (3a1) or as in (3a2):

(3) For example, the herioin addiction is guilty of drug abuse, people who are used to take drugs are suffer from a problem which the societies must not ignore it is importance, we do not say that drugs has no advantages, but it is disadvantages sometimes lead to death.

(3a1) Use of Heroin is an instance of drug abuse which might lead to addiction. or: (3a2) Heroin is one of the drugs that is responsible for addiction. Addiction is considered a serious problem which should not be ignored by society for it could lead to death.

I think that the rest of (3) which I have not included in the suggested sentences in (3a1) and (3a2) should be omitted since their information is not really significant. For example, the student mentions *the advantages of drugs* which I believe irrelevant, since he is talking about *drug abuse*, in other words *disadvantages.*

If we look at sentence (4), we see that the student is repeating him/herself again and again, and so there is no need for sentence (4) at all. As for sentence (5), it can be re-written as (5a) below:

(5) In fact addicts take these drugs so as to help them selves to "get going" as they say.

(5a) Drug addicts claim that the reason they take such drugs is because they "keep them going".

Here, the student is mistranslating his information by the wrong use of *themselves* and *get going.* It seems that the student has not been exposed to the right use of such phrasal verbs. Although, this problem is not an interlanguage one, still students need to learn how the structure the phrasal verbs of English differs from that in Arabic in order to avoid such mistakes.

In examining sentence (6), which is the start of a new paragraph on effects of drug abuse, we see that the writer seems to have more problems in finding the right collocation that is suitable in the right context. A better choice than the verb *cause* here, might be *can lead to.* I think that the use of *can lead to* is more appropriate and reflects the period of time in which a person could turn into an addict. This choice of appropriate words that sound natural for the situation they are used in, is not easy for the non-native learner to make if s/he is not taught the differences in using each and the different contexts as well as the different meanings applied in each case. In the same sentence (6), the student uses the expression *see objects that do not exist* and *experience sensations with no external cause* which can be simply replaced by the use of *imagine things* or by *hallucination.* Sentence (6) also needs to be divided into more than one sentence as follows in (6a):

> (6) Heroin and other drugs which cause addiction has a bad effect on mind, patients may have distorted images of objects, or they may see objects that do not exist, they may experience senstions with no external cause.
>
> (6a) Addictive drugs such as Heroin have adverse effects on the mind. Addicts, for example, may have distorted images or start to imagine things/hallucinate.

As for sentence (7), again the writer is repeating himself, and so I think sentence (7) should be omitted. The same applies to sentence (8), for the writer is not developing his argument, but instead is going in circles.

In sentence (9), we encounter another collocational problem when the student uses the phrase *mind-affecting drugs* instead of using *addictive drugs* and the verb *produce* instead of *result in.* Another collocational problem can be seen in the second part of sentence (9) when he writes *no loss of consciousness, poor judgement and the loss of normal ability,* and *see cause and effect relationship may results.* All of these phrases represent collocational difficulty and the student's inability to come up with the right ones. Sentence (9) can be improved if written as the following (9a):

(9) Also the use of mind-affecting drugs may produce large swings in moods and emotions, there is usually no loss of consciousness, but poor judgment and the loss of normal ability to see cause and effect relationship may result.

(9a) In addition, the use of addictive drugs may result in mood and emotion swings. The addict is usually conscious, but lacks a realization of the consequences of his/her actions.

Some of the problems discussed above in sentence (9), reflect a literal translation from Arabic, and others reflect lack of exposure to the natural use of certain expressions. This might be due to the fact that the student did not have enough exposure to the natural use of certain items, such as in the case of *mind-affecting drugs may produce.* Here, the first part of the phrase *mind-affecting drugs* can be a literal translation from Arabic, whereas the second half of it *produce* can be considered as a collocational error that was not clearly brought up to the student's awareness. Students are encouraged to simplify while they are engaged in the skill of paraphrasing, and this might be a case in which the student did not know how to do so.

From the above discussion on collocation, it should be clear how difficult it is for non-native learners to come up with the right choices which sound natural in the setting/s they are used in. I believe that the teaching of collocation is not a simple, straightforward technique. It is helpful to teach collocation as I have suggested before in contexts. I believe that the ideal situation for teaching in an academic environment in order to achieve a better understanding of language use, would involve co-operation between the English teacher and the subject teacher.

As has been observed in the previous examples, the problem of organizing information in a text is a prevailing one. The following section, therefore, will deal with the concept of Theme/Rheme which is essential in text organization.

### 4.2.4 Theme/Rheme

As has been mentioned in chapter 3, section 3.6.1, the textual aspect is one of the three semantic processes that should be taken into consideration while analyzing a text. The importance of the textual process stems from the fact that it reflects the speaker's/writer's intended message. In his discussion, Halliday [158], p.44 maintains that the study of functional sentence perspective (FSP) does not simply mean relating it to the context in which it occurs, but in finding "the speaker's [writer's] meaning potential that is being represented". The message, Halliday [98] argues, embodies two simultaneous message lines. The first one is what is known as thematization (Theme-Rheme), what I as speaker/writer am starting out from; and the other one is called information focus (Given-New), what I want you as listener/reader to attend to.

The way information is structured in the clause reflects its intended function in being Given or New. If an item is, for example, placed at the beginning of the clause, it would indicate the framework of what the speaker/writer is about to say, and so that item would be known to have a thematic status (Theme). It is considered as the point of departure for new information. Theme is viewed by Gosden [113], p. 207 as "[o]ne micro level feature which appears to have potential as a signal of macro structure and rhetorical organization". It is argued that the type of information mentioned in the theme is usually Given, or as Halliday [98] put it, backgrounded information, so as to prepare the reader/listener for the focus.

In his discussion of functional sentence perspective (FSP), Danes [159] argues that the concept of givenness is somehow relative and broad. Given information is presumed to be derivable or recoverable from the context, situation and common knowledge of sender and receiver. Of course, there are usually individual differences between the two interlocutors which can be related to differences in their experience, memory, etc. Danes believes that the idea of givenness can be either direct, in that identical words such as synonymous expressions or paraphrases are mentioned, or it can be indirect by using semantic inference. The rest of the clause

is known as Rheme, the foregrounded information according to Halliday [98], and is the part that transmits what the speaker/writer wants to say within the established framework. Danes [159] asserts that the notion of being new can mean new by not being mentioned in the previous text or new in the sense of relating Rheme to a Theme. By contrast, information focus determines the organization of text into discourse units.

Halliday [98], p.140 believes that this pattern of Theme/Rheme and information focus "provides a powerful resource for constructing and developing an argument". This pattern with the features of Theme and New of the clause grammar, Halliday [98] asserts, plays an important role in constructing the flow of discourse in many ways. For example, this pattern gives texture to a clause and creates a coherent logical sequence interacting with referential and lexical cohesion. Furthermore, Theme/Rheme relation throughout the text is considered as a major source of continuity and discursive power. Similarly, Lotfipour-Saedi [156], p. 56 argues that

> the text, at every stage of its presentation, should activate the various dimensions of background knowledge (BGK) involved and should attempt to enable the reader to visualize larger stretches or the whole of the text by attracting his attention to such dimensions and revitalising relations between what is given and what is new. In order to be able to cope with such a situation and in order to expand the operational sphere of any local textual unit beyond its boundary...., the text should be organized in specific units and specific indices should be employed to compensate for the limitations of its linear presentation.

Ventola and Mauranen [124] argue rightly that texts of competent writers are carefully processed in terms of thematic choices and thematic progression (TP). Thematic development or progression reflects how the various themes of a certain text relate to one another. It also shows how the writer develops his/her line of thinking throughout the text. Danes [159] asserts that the choice and distribution of themes in the text reveal a certain kind of pattern. Similarly, Francis [160]

advocates the importance of thematic selection and its importance in pedagogical applications. It is argued that text organization and connexity is determined mainly by thematic progression.

A number of researchers, such as Fries et al [161] and Martin [162], suggest that differences between genres are encoded in Theme. Therefore, they believe an analysis of theme choice, its distribution throughout the text, and the changes in its progressive patterning may reveal a textual flow that characterises that genre. Danes emphasises the importance of thematic progression in that it results in the concatenation of the themes, and in intensifying their relationship to the hyperthemes of the superior text units and the whole text. Consequently, thematic progression can be considered as the main frame of the plot.

In analyzing scientific texts, Danes [159] identifies three main types of thematic progression. The first one he calls simple linear thematic progression. He [159], p.118 shows this relation as follows:

> The first of the antibiotics was discovered by *Sir Alexander Fleming* in 1928. *He* was busy at the time investigating a certain species of germ which is responsible for boils and other troubles.

Danes believes that this type of structure organization represents a basic process of thematic progression in which each Rheme becomes the Theme of the following utterance.

The second type of thematic progression, Danes calls thematic progression with a continuous (constant) theme. In this type, only one theme appears to recur in a series of utterances through which different rhemes are linked up. He [159], p.119 demonstrates this relation as follows:

> *The Rousseauist* especially feels an inner kinship with Prometheus and other Titans. *He* is fascinated by any form of insurgency....*He* must show an elementary energy in his explosin.....

The third type of thematic progression according to Danes is the one that he calls thematic progression with derived themes. The themes here are derived from

a hypertheme of a paragraph. This kind of relation is shown as follows, [159], p.119-120.

> *New Jersey* is flat along the coast and southern portion; the north—western region is mountainous. *The coastal climate* is mild, but there is considerable cold in the mountain areas during the winter months. *Summers* are fairly hot. *The leading industrial production* includes....

This pattern of hypertheme provides good cohesive ties between sentences within a paragraph by having the thesis sentence of the paragraph as the main theme and the following sentences as supportive ones to this theme.

Theme, according to Halliday [83], can be either marked or unmarked. It is marked in a declarative clause when it is not (part of) the subject, and is unmarked when it is the subject of such a clause. As has been observed before, the importance of the unmarked theme is to facilitate comprehension by providing constant referential items within an extended piece of discourse. In contrast, marked choices, Gosden [113], p. 208 argues, have their special function as writer—selected signals. His following example shows an instance of this marked choice:

> However, the exact role played.....is largely unconfirmed.

In this case, the textual item *however* has been chosen as the theme and thus the point of departure predicts contrast. Such fronted elements, as in the above example, often at sentence boundaries, usually have the function of textual organization. Gosden asserts that the recognition of these internal signals helps to identify the rhetorical moves pointed out by Swales [163] [95]. Furthermore, Gosden [113], p.215 asserts that such use of unmarked items indicates "a writer's attempts to overtly create a more cohesive text". Eggins [164], p.296 asserts that the term unmarked simply means "most typical/usual", and reflects a state of being equal, while marked means "atypical, unusual". When a marked choice is made, it means that the writer/speaker is signalling that things are not equal, "that something in the context requires an atypical meaning to be made".

Gosden [113], p.208 uses Davies's [165] argument which maintains that fronted marked elements in the discourse of scientific research articles usually indicate certain notions such as validation of internal evidence, location in discourse time/space and the writer's viewpoint. The following examples from Gosden [113], p.208 show these indications respectively.

according to our results...

in brief...

in figure 2b...

interestingly...

Gosden asserts that the semantic notion is more prominent when using multiple themes, such as *However, recently...* where the marked theme of contrast is chosen ahead of the secondary marked theme of time. He [113], p.210 believes "that local thematic choices are very much determined and constrained by the global within-text structuring of the [research article] genre, and hence are part of a predictable dynamic progression".

Davies [166] calls these marked choices (sentence-initial elements (SIE) Contextualizing Frames (CFs). He considers these sentence initial elements as pivotal points in discourse since they give a clearer picture of the structure and progression of research article discourse. In his study on "Discourse Functions of Marked Theme in Scientific Research Articles", Gosden identifies two features of these sentential initials: grammatical/syntactic categories and functional role in scientific research article discourse.

Under grammatical categories, Gosden [113], p.211 identifies three main contextual frame types. The first one includes conjunctive/modal adjuncts and conjunctions. Examples of conjunctive adjuncts include: *briefly, however, moreover, therefore, likewise.* Instances of modal adjuncts include: *certainly, evidently, unfortunately, surprisingly.* As for conjunctions, they include items such as *but, and, yet, nor, so.* The second type of the grammatical categories includes: prepositional

and adverbial phrases. The third type Gosden identifies subordinate clauses and nonfinite clauses.

As for the functional categories of contextual frames, Gosden [113], p.212-214 identifies nine types: location in time (real world and discourse entities), location in space (real world and discourse entities), addition (appositive and emphatic), contrast/concession, cause–reason/result or purpose, means, condition (real and hypothetical), validation (external and internal), and viewpoint. Gosden argues that the flow of marked theme is pivotal to the text since it provides cohesion and coherence, and hence to the achievement of a research article writer's purpose.

In their study of texts written by Finnish writers, Ventola and Mauranen found that Thematic choices play an important role in facilitating reading and in improving the texture of a text. They pointed out that texts by Finnish writers reveal lack of theme connexity which reflects a rushed feeling due to the lack of use of constant themes or hyperthemes discussed earlier. They found that their texts move very quickly from one topic to another.

Ventola and Mauranen [124] believe that thematic choices create relationships of parallelism, contrast, causality, etc, on the intersentential and the intrasentential levels. If consecutive paragraphs begin with similar themes, they are considered relatively easy to interpret as being parallel and so would be easier to comprehend. After looking at the revisers' correction, they found that revisers did not pay any attention to thematic choice as there were no changes to the themes which deterred reading intelligibility. It seems that revisers focused only on lexicogrammatical aspects. At some point, the reviser's correction was even misleading and the writer's intentions on the discourse level were somehow overlooked.

It seems that Finnish writers are not the only ones who have problems in maintaining a constant theme. Arab students seem to have this problem as well. Kharma and Hajjaj [11] attribute this problem to rhetorical differences between English and Arabic. In Arabic, we have two different languages, colloquial and standard. The standard language is only used in formal communications and even in most of Arabic teaching classes, the colloquial language is the one that prevails. In addition, Arabic writing, Shunnaq [130] argues, is characterized by a

good deal of repetition and exaggerated language which sounds odd and flowery to the English ear. Unlike the English pattern (of a distinctive introduction, body and conclusion), the pattern of Arabic writing is circular. Punctuation techniques have been only recently introduced to Arabic and so students still find it difficult to understand the logic behind punctuation. Functional systems such as cohesion and theme/rheme structure have not been explored in Arabic Language. These are some of the differences that might shed some light on students' problems writing in English.

The first text that I would like to tackle in terms of its thematic choices is one that is taken from the conclusion section of a report on Smoking. This report is written by a nursing student of twenty years old, in her second term. The text has been quoted as it is except for the numbering of sentences for easy reference.

(1) As general factors, smoking is a deeply and important matter.

(2) Also, it is endless subject to be solved.

(3) Simply we say that smoking is a bad habit, starts from the first cigarrette, and ends to addiction.

(4)People smoke for many reasons, like:

(5)smoking starts with young people just to their elders.

(6) Next, circumstances and atmosphere which people live in, lead them for smoking.

(7) Now when a smoker is an addict, he himself never listened to advices, and when he tries to give it up, he postponed, that may be related to his control.

(8) In order to minimize the effects of smoking, experiments have been shown by programmes, either by magazines or T.V., also lots of treatment of medicines have been made to reduce the tendency of smoking.

(9) As we are humans, have body and soul, knows that smoking is destructive for our health.

(10) So we must give it up by our will power and we have faith in prevention is better than cure.

It is clear that the above text again suffers from a considerable number of problems. It is weak in its organization, in its linking of ideas, and in collocation, as well as in its thematic development. If we have a cursory look at the different Themes in the text we find the following: (1) As general factors, (2) Also, (3) Simply we say, (4) People, (5) Smoking, (6) Next, (7) Now, (8) In order to minimize the effects of smoking, (9) As we are humans, and (10) So. This thematic distribution shows that the text is only very loosely connected. Furthermore, if we look at the Rhemes, we will find that the student is not connecting Themes to Rhemes and is not making use of any of the thematic progressive types mentioned before.

This text is supposed to be a conclusion to a report on smoking, but there is no indication of that at all. I believe that the use of expressions such as *in conclusion* or *from the previous discussion* would be helpful in this section to tie it up with the preceding ones. So, sentence (1) can be improved if written somewhat as in sentence (1a).

(1) As general factors, smoking is a deeply and important matter.

(1a) From the previous discussion, it becomes obvious that smoking is a serious matter.

The way the student starts her paragraph does not give the impression that smoking is a serious problem. By re-writing the sentence as in (1a), I believe that the problem becomes more obvious because there is a reference to a previous discussion which supports this point. Therefore, the Theme in this sentence should be something that relates to previous discourse in order to prepare the reader for the new information, for the external validation, which is here a summing-up of the previous discussion that "smoking is a serious problem".

It has been mentioned before that repetition is one of the common and recurrent problem of Arabic composition and it is manifested here in sentence (2). There is no need for the second sentence for it has already been mentioned. This style which

reflects flowery use of language and exaggeration in discussion without focusing on the ideas themselves is one of the problems that Arab student writers have. This reveals lack of knowledge about the topic. Another way of looking at sentence (2) is to join it to sentence (1) as follows in (1aa):

(1aa) From the previous discussion, it becomes clear that smoking is a serious and an endless problem.

Again in sentence (3), the student does not link it to any of the previous information. She could have made it easier and more cohesive to read if written something as in (3a).

(3) Simply we say that smoking is a bad habit, starts from the first cigarrette, and ends to addiction.

(3a) Smoking is serious because it is considered a bad habit that usually starts with one cigarette and ends in addiction.

It seems that the student in writing this text was rendering it in her mind in Arabic, and to me, the text sounds like one that might be more suitable to present orally. I say that because it is full of repetition, uses pronouns such as we, and because of several other features of the text. In re-writing sentence (3) as (3a), it becomes better connected to previous sentence and in this way we have a link by using the previous rheme as a theme in sentence (3a). In the original sentence (3), the writer has problems with the use of appropiate prepositions. She uses "*from* the first cigarette, and ends *to* addiction". The incorrect use of prepositions is a recurrent problem. It seems that the way the student is using these prepositions reflects a problem of interlanguage. I have not focused much on this problem for it does not have a significant effect on reading intelligibility.

In sentence (4), the writer starts a new paragraph to introduce the different reasons behind smoking. I think there is no need to start a new paragraph, for the writer is still discussing the same topic, "smoking" unless he wants to move on and discuss the different reasons behind smoking among differnt group of people

which seems more what he is trying to do in the preceding sentences. Therefore, sentence (4) could stay as it is and only omit the word *like* as in the following (4a):

> (4) People smoke for many reasons, like:
>
> (4a) People smoke for many reasons.

This move of Theme from *smoking* to *people* indicates a move into stressing another factor. Then the writer can proceed by introducing these factors as follows in (5a) and (6a):

> (5) Smoking starts with young people just to their elders. (6) Next, circumstances and atmosphere which people live in, lead them for smoking.
>
> (5a) The first reason is that, with some people, it starts early and thus becomes a habit as the person grows older. (6a) The second reason behind smoking might be a social one.

The use of constant themes has been thought to give a monotonous style to a text, but Williams [167] argues rightly that keeping a constant theme (a psychological subject/topic) within a string of sentences is essential in achieving cohesion and clarity. He believes that monotony can result from using too many short or long sentences and from stuffing the text with nominalizations and passives (which often learner writers are advised to do). Consequently, a consistent focus of themes is important to focus attention on a circumscribed set of concepts. Williams [167], p. 51 believes that such topics are important because they help in guiding the reader to follow a certain structure.

> [Such topics control the way] readers read sentences, not individually but in sequences, and the way that writers must therefore organize *sequences* of those topics. The most important concern of a writer, then, is not the individual topics of individual sentences, but the cumulative effect of the sequence of topics.

Williams asserts that the secret to a clear and readable style lies in the first five or six words of every sentence as a means of creating a familiar territory for the reader and establishing a consistent point of view and a consistent topic string.

On reading sentence (7) in the above text on smoking, the reader is left puzzled and lost in a number of ways, for it does not sound English. It is obvious that the student has difficulty in presenting the topic that he wants. I think what the writer is trying to say here is something like the following (7a):

> (7) Now when a smoker is an addict, he himself never listened to advices, and when he tries to give it up, he postponed, that may be related to his control.
>
> (7a) The problem of smoking is apparent in addicts who have no will-power when trying to quit.

Sentence (7a), I believe, provides a clearer link to the previous discourse by using a familiar Theme "problem of smoking" to introduce the new information about the lack of will-power amongst smokers.

Moving on to sentence (8), we can see that the student has collocation problems here. I believe that she is trying to introduce ways by which smoking can be reduced by saying something like "in order to reduce smoking". The student uses the word "effects" wrongly here to discuss ways in which smoking can be reduced. Sentence (8) can be improved as suggested in (8a):

> (8) In order to minimize the effects of smoking, experiments have been shown by programmes, either by magazines or T.V., also lots of treatment of medicines have been made to reduce the tendency of smoking.
>
> (8a) Smoking can be reduced in many ways. One of these might be by presenting programmes on the bad effects of smoking, either on T.V. or in different magazines. Another way of controlling smoking might be by making available medical treatment.

By re-writing sentence (8) as in (8a), it becomes clear that more than one sentence is needed here to make clear the different ways by which smoking can be reduced, more prominent. As for sentences (9) and (10), I suggest to leaving them out of the text for they do not add any thing to the text and besides they sound too spoken and Arabic.

Another problem that is recurrent in the texts written by JUST students is the problem of argument development. This problem of developing the argument in the text will be discussed and examined more closely in the following section on sentence relations.

### 4.2.5 Sentence Relations

By exploring sentence relations or argument development in writing done by JUST students, the notion of a better text comes to mind [10]. Texts can be compared in terms of their quality in that one textualization might mean more or be better than an alternative and is therefore considered to be communicatively more successful. In other words, a text is considered to be more successful by how much more the reader gets out of it. Coulthard [10] believes that an awareness of the process of writer-reader communication through text can provide some principles to enable us to propose improvements to the original version of the text. Although the process of writing itself is not linear, the produced text is, and therefore the text should be organized according to certain rhetorical patterns as discussed in chapter 3 sections 5 and 6. Such patterns include general/particular, problem/solution, and matching pattern [35].

Previous excerpts from JUST students' reports show how students' writing suffers from inability to relate sentences to each other and reflect a loose kind of writing in jumping from one idea to the other. In this section, therefore, an examination of sentence relations is going to be tackled and exemplified. In discussing this problem, an excerpt will be taken from one of the student's reports on "Air Pollution" written by a twenty year old student in his first year, studying

agriculture. The text is quoted as it is apart from numbering the sentences for easy reference. The text is taken from the conclusion section.

(1) In the previous sections we took a general idea about the problem of the 20th century which is air pollution.

(2) Firstly, we considered the causes of air pollution as a primary and secondary causes and we have dealt with each of them.

(3) Secondly, we turned out to have a general look at the effects of air pollution and they were divided into effects on man, animals, plants and materials.

(4) Finally, we briefed the ways in which we can minimize these effects all over the world and specially in Jordan.

(5) So, it can be concluded that the main effect of air pollution is that on environment and plants because man and animals are greatly dependent on them.

(6) And so, the most important sources of air pollution are these that affect plants and environment such as the growth of population as proved in the body.

(7) I think that air pollution is a problem which can be solved by the cooperation between the governments of the world and from another side between each government and its own people.

(8) I believe that the solution of this problem is not difficult to reach because most often causes are man-made ones and therefore, man will be able to stop these causes.

The above text suffers from a number of problems such as the inappropriate use of syntax, conjunctions, collocation, and text organization. My main concern here is to examine text organization in terms of its rhetorical pattern. The inappropriateness of organization of the above text is tangible. It seems that the student is transcribing the Arabic pattern without taking into consideration the

appropriate pattern for writing in English. A translation of his Arabic thoughts to conform with the English pattern is needed here. The above text sounds like fragments of sentences joined in one way or another. The whole organization of information in the above text leaves the reader in a quandary. The writer is moving from one point to the other and back again in circles. There is no clear sequence to the structure of his information. The whole text needs to be re-arranged to make some sense of it. I will first try to discuss the sentences as they are in this present sequence, and then I will suggest ways of re-arranging the whole discoure.

If we start by looking at sentence (1), we will see that it sounds Arabic not only to the English ear, but also to teachers of English as a Foreign Language. As this section is the conclusion of the report, I believe that the writer should indicate that. Sentence (1), I believe can be improved if written something like (1a).

> (1) In the previous sections we took a general idea about the problem of the 20th century which is air pollution.
>
> (1a) In conclusion, we can see that air pollution is one of the major problems of the 20th century that should be handled more seriously.

I believe that, in writing any text, students should be exposed to the different patterns of writing and should practise the different ways in which these patterns can be used. For example, the begining of this conclusion can use the pattern of problem/solution. The student could have started by saying that air pollution is considered a problem, making this his thesis statement on which he builds in the successive sentences. In this way air pollution is considered as the situation and thus make it more accessible to the reader for a better understanding. It is believed that the exposure to such rhetorical functions of the language is essential in developing learners' abilities to use such functions in their writings. Geranpayeh [168] found that a focus on the rhetorical functions of generalisation and classification in the teaching of the writing skills to EFL learners in Iran, has revealed a positive effect on the development of writing ability.

Now if we turn to sentence (2), we will be faced with the same problem again. From sentence (2) onwards we can see that the student is repeating himself all the

time and it seems that he has not been taught *when* and *what* to repeat depending on the audience (reader) and his background knowledge. It seems that the writer here does not have a clear sense of audience [10].

Another observation about JUST students' writing is that they do not know how to aver, and more particularly how to signal that they are *not* averring what is said. Their writing is mainly factual and the use of expressions such as *think, believe, may*, etc.. does not exist in their writing. This aspect of writing is very important and it seems that students need to be exposed to such techniques in order to know when to aver and when to distance themselves while presenting certain information [94],[169],[100]. [10]. Going back to sentence (2), it can be improved as in (2a):

(2) Firstly, we considered the causes of air pollution as a primary and secondary causes and we have dealt with each of them.

(2a) Firstly, the primary and the secondary causes of air pollution were discussed and exemplified.

As for sentence (3) and (4), the writer seems to have many problems here, such as collocation in sentence (3) in his/her use of *turned out to* instead of *turned to*, and in sentence (4) in using the expression *ways in which* instead of *ways by which*. Sentence (3) and (4) can be refined as suggested in (3a) and (4a).

(3) Secondly, we turned out to have a general look at the effects of air pollution and they were divided into effects on man, animals, plants and materials.

(4) Finally, we briefed the ways in which we can minimize these effects all over the world and specially in Jordan.

(3a) After that, a discussion of the effects of air pollution on man, animals, plants and materials was introduced.

(4a) Finally, different ways that can be used to minimize the effects of air pollution, especially in Jordan, were summarized.

If we examine sentence (5), we can see that the student is drawing his/her conclusion here, which I believe should have been stated at the very beginning. This shows how the process of revising learners' writing should be done as a whole discourse and not sentence by sentence, because of course the whole arrangement of the text should be different as I have mentioned at the beginning. I believe that this sentence (5) can be rewritten to represent sentence (1) because this is the conclusion of the previous discussion of the whole report. Thus, sentence (5) can be reformulated in another way as suggested in (5a):

(5) So, it can be concluded that the main effect of air pollution is that on environment and plants because man and animals are greatly dependent on them.

(5a) It can be concluded that air pollution is one of the major problems in the twentieth century and its effects on environment and plants are considered to be crucial.

Sentence (6) is another problematic one in that it suffers an item of connectivity and is shallow in its reference to the relation between the main problem *air pollution* and *factors that increase this phenomenon.* Sentence (6) can be rewritten as in (6a) in a more reader friendly way as follows.

(6) And so, the most important sources of air pollution are these that affect plants and environment such as the growth of population as proved in the body.

(6a) Some of these factors that have a direct influence in increasing the level of air pollution such as population growth have been discussed.

Sentences (7) and (8) can be discussed together since they are about one idea which is the solution of the problem of 'air pollution'. The writer again suffers from verbosity and is very much influenced by the pattern of writing in Arabic. Sentences (7) and (8) can be refined by the following suggestions in (7a) and in (8a).

(7) I think that air pollution is a problem which can be solved by the cooperation between the governments of the world and from another side between each government and its own people.

(8) I believe that the solution of this problem is not difficult to reach because most often causes are man-made ones and therefore, man will be able to stop these causes.

(7a1) The problem of air pollution can be tackled globally by increasing cooperation between goverments, as well as locally by cooperation between the government and its people.

(8) Since most of the causes of air pollution are man-made, then the solution of this problem is up to the people.

The above text reflects the student's lack of exposure to the rhetorical patterns of writing and in this case the one of problem/solution. Exposure to such patterns is very important for they make the written text more reader-friendly. Another problem that needs to be emphasized is that the process of writing involves merging all the functional patterns: the ideational, interpersonal and the textual all at once. It seems that the writer of the above text and the previous excerpts as well did not go through further drafting which is essential before coming up with the final version.

It seems that all the various problems that have been tackled throughout this chapter are not limited to non-native students. It becomes clear that the skill of writing is a problematic area that needs a lot of careful consideration in teaching both non-native and native speakers of English. In research carried out by Christine Robinson [131], p.101 investigating writing competence among native English-speaking engineering students at the University of Edinburgh, she found similar problems to those that arose already in this analysis. Some of these common problems include: run-on sentences, conjunctions, and weaknesses in the logic of the argument.

The following extract Energy is taken from a native speaker of English in his first year in the department of Engineering at the University of Edinburgh to

show that the skill of writing is a problematic area which needs more attention whether or not the students are native speakers of English. The following piece of writing was required as a learning log in which students choose the topic they are interested in as long as it is related to their subject courses. The following text is kept as it is with no alteration apart from numbering the sentences for easy access. The text will be discussed briefly focussing on the problems and difficulties shared between native and non-native speakers of English.

(1) Energy is one of the most important thing in the Universe with every action requiring energy in one of its many forms.

(2) There are different kinds of energy which can be transformed into different types.

(3)For example, our bodies change chemical energy (from food) into kinetic and heat energy.

(4) The key concept with Energy is that there is only a certain amount of energy in the Universe and it can only be transformed from one kind to another.

(5) We cannot add or manufacture energy and we cannot destroy some energy- we can only transform it.

(6) This concept is known as the conservation of energy.

(7) Mechanical energy comes in two forms -potential and kinetic.

(8) Kinetic energy is the energy a body possesses when it moves.

(9) Potential energy is the stored energy waiting to be released as another form. (i.e. kinetic) and is due to the height of a body above the ground.

(10) Mechanical energy can be considered as work done as we need to do work to get these energy's.

(11) This energy is usually generated for immediate use as it is difficult to store.

(12) Electrical energy is the most useful energy in the way of communication because it can be quickly transported through wires.

It is clear from the above extract, which was written by a native speaker of English, that the student suffers from a number of problems, such as paragraphing, punctuation, and the provision of a thesis statement. The text obviously deals with the different forms of Energy, but the student fails to establish his topic at the beginning of his writing. If we examine sentence (1) we find that he states the importance of Energy referring to it as *thing*, which is a word that students are usually advised not to use because of its vagueness. In addition, this word reflects lack of knowledge of sufficient and more appropriate vocabularies, which means that the student is stuck for the right expression. A word such as *phenomena/ matters* or *factors* can be used here instead of the meaningless, non-technical word *thing.*

Sentence (1) makes up the first paragraph of the student's writing. I believe that a better way of introducing the topic can be achieved by introducing the different forms of energy right at the begining after stating the fact that 'Energy is one of the most important phenomena in the Universe'. Sentence (1), therefore, can be modified if written something like (1a), (1b) and (1c) to make up the first paragraph:

(1a) Energy is considered as one of the most important phenomena in the Universe. (1b) It can be of different forms: mechanical, electrical and chemical. (1c) These forms of energy can be transformed into different types.

By establishing the first paragraph as suggested in the above sentences (1a)-(1c), the reader will be better oriented towards the further or later development of the written piece. I believe that sentences (4), (5) and (6) can be included as well to make up the first paragraph. The writer then can proceed to present and discuss each form of energy in a different separate paragraph. So, it seems that the sequence in which these sentences are presented was not given enough

consideration. It is clear that the student has not been exposed to the strategies of editing and re-drafting.

If we look at sentence (7), we find that the student is introducing a new topic 'Mechanical energy' within the previous paragraph which discusses energy in general. This shows that the student has not been taught the mechanical strategies that can be used to produce a clear piece of writing. In general, the student's writing reflects an inability to present his thoughts in an organized sequential way.

The above text shares some of the problems faced by non-native speakers of English in that it has weaknesses in the logical presentation of argument. In addition, the above piece shares with the previous texts written by Arab students the difficulty in introducing the topic, i.e. in coming up with a suitable thesis sentence. Such difficulties and problems facing native speakers of English were recognized by Robinson [131] for she found that native speakers of English have a low standard of writing skills when entering the course of Writing Skills at the University of Edinburgh.

### 4.2.6 Conclusion

It is clear from the analysis carried out in this chapter that the skill of writing needs more attention in order to equip students with better strategies in handling their own writing, whether they are native or non-native speakers of English. The systematic functional analysis helps in clarifying some of the features of scientific conventions and the different structures used in science writing. Furthermore, it reflects where students need most help as exemplified in the different sections dealing with such specific problems as: reference, conjucntions, collocation, Theme/Rheme and sentence relations.

The analysis reflects how little students, especially JUST students, are exposed to authentic material and the importance of this exposure to their development as scientific writers. It seems that modified materials have been used in teaching such students which, apparently, were not good enough. This insufficient ability to

write appropriately was reflected by the students themselves and by their subject teachers. The students used to complain that they cannot apply the strategies they learn in their English courses to their subject classes. Similarly, their subject teachers were not satisfied with the level of their students' writings. Another complaint by students was that the feedback they used to get was not helpful at all. It seems that a structured kind of feedback is as vital as teaching students the different conventions and grammatical strategies of writing as Robinson [131] also found in her investigation. The following chapter, therefore, will draw up a course design by adopting a genre-based developmental, interactive approach to science writing.

# Chapter 5

# A Genre-Based, Developmental, Interactive Approach to Science Writing Course Design

## 5.1 Introduction

The analysis of written texts carried out in chapter four reflects the proposal that discourse conventions can be profitably regarded as having interrelated functions in the social, cognitive, and textual domains [170]. Discourse analysis in chapter four has presented and outlined the different problematic areas encountered not only by Arab student writers at JUST, but also by writers whose mother tongue is English. A critical discussion of such problems is presented as well as suggestions for modifying such problematic texts.

Research shows that writing is a problematic skill for all kinds of writers no matter what their mother tongue is. Robinson [131], for example, emphasises the need for teaching science students, whose mother tongue is English (her investigation was done on engineering students), how to write appropriately by using the correct scientific genre and its conventions. Discourse analysis in chapter four has shed some light on students' recurrent problems and weaknesses. The analysis reflects how little students are exposed to the conventions of scientific writing.

It is clear from the previous analysis in chapter four that the skill of writing is a problematic area for all learners in all levels, undergraduate and graduate [171], [172] and [173]. In recent years, the nature of successful writing and the many factors that contribute to it have been the focus of many linguists and English practitioners. Like Coulthard [10], Gosden [174] believes that raising the awareness of what makes a text successful or not, can be essential in improving writing abilities.

Like any other skill, the teaching and the learning of writing needs involvement. Students need to be involved in the actual act of writing and to be exposed to the conventions of scientific writing. The teacher-centered approach which was the focal technique in the traditional approach has failed because students, in this approach, are distant from actual involvement. Therefore, a learning-centered approach in teaching writing has emerged to emphasise the active involvement, not only in terms of learners' participation, but also in terms of involving them in the actual process of writing and so enabling learners to become autonomous writers.

In a way, the process of learning *how* to write resembles that of learning *how* to drive in that the learner will need to start off by learning certain conventions and rules about driving (which might differ from one country to the other), such as stop signs, detours, u-turns etc. Then, after having learnt the rules for driving, the learner will be given a chance to get involved by taking part in applying what s/he has learnt; this will be done firstly in a closed restricted area and afterwards will come to practice in a wider and broader context, in real situations where the learner will keep on practicing again and again, improving his/her performance as s/he goes along until the skill becomes more autonomous and spontaneous. Although writing might be one of the most difficult skills to master even in one's own language, it is well known that in order to master any skill, there is a need for continuous practice and patience. Smith [175] argues rightly that learning how to write is analogous to our learning how to talk; i.e. by extensive exposure to written texts within a particular community who 'apprentice' us as junior members of their club.

Similarly, in a writing environment, the learner has to learn and become familiar with the conventions of writing, such as the grammatical, rhetorical and lexicosyntactical conventions. Then, the learner will start using these conventions at the sentence level to build up his/her knowledge of bottom-up strategy and then s/he will be exposed to longer discourses in order to master the strategy of top-down. As has been mentioned in chapter two, in bottom-up procedure, one has to proceed from the most detailed features of discourse by looking at words and the lexicogrammar that controls their connection and afterwards proceed to the more general levels, such as discourse structure, discourse type, and social relations. On the other hand, in top-down procedure, one starts with the general and then moves down to the detailed levels. By keeping on writing and by evaluating such writing, the learner will be able to achieve a high level of writing that is more efficient, and eventually writing becomes more autonomous as well as more spontaneous.

Atkinson [170] believes that the discourse conventions of any written text function at four linguistic/ rhetorical levels and one non-linguistic level. The non-linguistic level includes factors such as cognitive and social functions. Atkinson [170], p.65 calls these conventions "conventions for construing reality". As for the linguistic/rhetorical levels, Atkinson asserts that they function at four levels: macro-rhetorical level, rhetorical, phrasal-clausal and the lexical level. The conventions at the macro-rhetorical level, Atkinson [170], p.65 believes, are those mechanisms that convey a sense of spatio-semantic coherence to the text. Such conventions include titles, headlines, and text-sectioning as in the introduction, methods, results, and the discussion sections of scientific research report format. Atkinson[170], p.65 calls this level of coherence *design coherence* in that it is "a function of the higher level *architectural* structure of the text; this is opposed to local coherence-maintaining devices such as cohesion markers".

As for the rhetorical level of text conventions, Atkinson [170] asserts that such conventions feature the top-level in its organizational structure of a text, such as problem-solution structure [35]. Text-type of different patterns has often been noted by researchers such as the works conducted by Swales[163], [95] for scien-

tific research reports. It is assumed that the conventions at this level are more integrative in function than those in the macro-rhetorical conventions whose main function is to divide and partition texts for what Atkinson [170], p. 66 calls "purposes of spatio-semantic organization".

This rhetorical level of text convention is not closely evaluated by EAP teachers at JUST. The main emphasis of their evaluation is on macro-rhetorical conventions as evident in Mustafa's [176] article. In her paper, Mustafa investigates the macro conventions of a term paper by examining its basic parts, such as: the thesis statement, table of contents, introduction, body of paper with its major sections and subsections, conclusion and the references. Such an emphasis, I believe, underemphasises the more important level of evaluation, which is the rhetorical level. An overemphasis on the structure and mechanics of the term paper is one of the problems of teaching that is realized as well by Miller [177]. Since the rhetorical level in its emphasis on idea and argument development is the one that concerns subject teachers most, then it should be given more emphasis and more help should be provided in this particular area to equip students with the essential means to satisfy their needs as well as the needs of their subject teachers. Therefore, I believe, a shift in emphasis is needed in the teaching and the evaluation of writing of science students at JUST. There should be more emphasis on the rhetorical level for it is considered the most important level by subject teachers as well as by linguists, such as Atkinson [170].

On this rhetorical level, Swales [163], for example, has identified a four-part sequence of rhetorical moves in the introductory sections of scientific journal articles. He puts forward the first initial move which functions as the convention used in *establishing the territory*, i.e. the introduction of the topic under discussion. Swales' second move includes a brief review of previous research. In the third move, a gap or unexplored area in the body of research is presented. At the final rhetorical move, an introduction of the contribution of the new research is set up. This same sequence of moves was found as well by Atkinson [178] to be highly regular when investigating a random selection of medical research articles of different specialities.

The third type of convention that Atkinson argues for is the phrasal-clausal level of discourse. It is argued that this type of convention includes two different patterns. The first one is what Pawley and Syder [179] call the "frozen formulaic expressions", such as the conventionalized openings and phrasings of business letters. The second pattern of the phrasal-clausal level of discourse includes the grammatical structures, such as the passive that is used in the scientific discourse. Although this use of the passive is the production of syntax, it is constrained through conventionalized association with specific rhetorical context. The final convention of discourse is the one at the lexical levels.

Before starting off with my proposal of a course design for the teaching of writing scientific reports in English, I believe it is important to state some of the facts that any teacher of writing should consider. Teachers of writing should emphasise to their students the fact that the skill of writing can only be mastered by being involved in the process of writing itself which includes all the stages of planning, gathering information, analyzing material, synthesising, documentation, drafting and re-drafting as well as evaluation. The learner should know that these steps are essential for successful writing and need effort and patience on his/her part.

In an EAP environment, the ideal situation, I believe, would involve cooperation between both the English teacher and the subject teacher [171], [172]. Widdowson [180] and [138] was the first one to advocate the teaching of language through an integration of language and content courses. He believes that this would ensure the link with reality and the students' own experiences as well as providing the premises for teaching language as communication. Similarly, Mohan [181] stresses the importance of such an integration between language and content in that it would not only help students in learning a language, but also it would enable them to understand how to use the language to learn.

Based on a project at Sultan Qaboos University, Flowerdew [182] argues favourably for a content-based language instruction course. He believes that establishing such a course at Sultan Qaboos University, where cooperation between language and content/subject teachers is implemented, proved to be successful in many ways.

One of its positive results is what Swales [183] claims as the ability to resolve stress and tension between learners, language teachers and content teachers as manifested in the experiment in team teaching conducted by Johns and Dudley-Evans [184]. Flowerdew believes that tension in such an approach is reduced through the intense observation of content classes which results in continuous modification of the language curriculum to adhere to the needs of learners and content teachers. Another positive result cited by Flowerdew is the use of database language in the content classes as a basis for achieving a higher level of communicative proficiency.

Of course each situation has its own constraints, and for such an approach to succeed, Flowerdew believes that there should be full support from the institutional administration, cooperation between the language centre and other faculties or departments, a full cooperation of content staff, highly qualified and motivated language staff, and an understanding by the learners of what is expected from them. English teachers might find it difficult to get some support of other members in the different departments at JUST for most of the staff in such departments have an overload of work. In presenting the syllabus, I will mention the constraints that face the English teacher at JUST and how can s/he make the best of the situation s/he is in.

The classes in which the teaching of English at JUST takes place, consist of students from different science faculties, such as medicine, engineering, pharmacy, biology, agriculture, nursing and public health. Therefore, a general scientific genre is needed instead of teaching a specific genre. Otherwise, grouping of students according to their subject is another possibility which, I believe, might be much more beneficial and fruitful for our students especially since they complain all the time that they can not apply the strategies they learn in their general English classes to their own subject material. The following section will discuss different approaches to course design for science students. After that, I will present my own approach which I believe suits the situation and the needs of our students at JUST, as well as in teaching writing to science students in general with some modifications according to the teaching/learning situation.

## 5.2 Approaches to Course Design for Scientific Writing

A great deal of research in the last two decades has dealt with teaching English as a foreign language and different approaches have been implemented, sometimes focussing on form and at other times emphasizing content. Such approaches have been dealt with in chapter two where a distinction between the traditional/perspective approach and the communicative/contextual one has been examined. The impact of these two approaches on the fields of interpreting language and analyzing it, as well as their impact on effective learning, has been discussed. It has been suggested that the association of these two approaches is the best way that can provide more effective learning. It has been established in chapter two that the two approaches are of equal importance to the teaching of the language and as a result a combination of both approaches is considered essential for the learner to master both bottom-up and top-down perspectives. In this way, the learner will be exposed to structures and functions of language which are essential and work side by side in achieving the ultimate goal — which is autonomy.

Hutchinson and Waters [185] give a valuable presentation and comparison between the different approaches to the teaching of English for Specific Purposes. The recent approach that is favoured by most English practitioners is the learning-centred approach. A focus on the type of activities is vital in this approach for through such activities learning can be achieved [186]. The importance of this approach stems from the fact that it envisages the syllabus as being dynamic in terms of recognizing "methodological considerations, such as interest, enjoyment, [and] learner involvement"[185], p.92. All these elements should influence the content of the entire course design. A syllabus should not be viewed as a writ i.e. a fixed document, but (according to Hutchinson and Waters) as "a working document that should be used flexibly and appropriately to maximise the aims and processes of learning" [185], p. 94. Every syllabus should consider the target need of its learn-

ers. It is clear that the target need for our students at JUST is to enable them to become more autonomous writers. Therefore, besides the learning-centered focus, the syllabus should also consider the different conventions of scientific genres, all of which will help in achieving such a goal.

In another study, Geranpayeh [168] stresses the importance of teaching the rhetorical functions of language through controlled writing to his students at the tertiary level in Iran. He reports on the impact of this teaching on his students' writing abilities. He follows Widdowson's [138] distinction between *use* and *usage*, in that the former is concerned mainly with the linguistic rules, whereas the latter emphasises the use of such linguistic rules for effective communication and for developing natural language behaviour. Widdowson [138] believes that such a goal can be achieved by following two types of exercises: preparation and exploitation.

The preparation exercises are the ones that precede the reading passage which help learners to be involved in the actual writing. The exploitation exercises, on the other hand, are the ones that follow the reading passage that are used to exploit that passage for the purpose of practice material. Such exercises, Widdowson [77] believes, promote a gradual approximation of learning for they emphasise the importance of both *use* and *usage*.

In the field of scientific writing, especially the writing of research papers by non-native speakers of English, researchers such as Dudley-Evans [187], [188], and Swales [163], [95] have researched such types of writing in order to come up with an appropriate method of teaching scientific genre used in research and report writing. In a recent study, Dudley-Evans [171] proposes an approach for teaching academic writing for learners of English as a foreign language. In his approach, he outlines three types of teaching: common-core teaching, specific assignments, and a writing club. As for the first type, the common-core teaching of general academic language and discourse, Dudley-Evans believes that teaching such classes can help in defining the genre that is used and in developing the conventions and the lexico-grammatical forms relevant to each section of report writing.

The second type of teaching according to Dudley-Evans is done through teaching specific classes related to assignments in specific departments. In classes of

this type, teaching is carried out by both the language teacher and the subject teacher. Such classes, Dudley-Evans believes, help in carrying out a discussion of different strategies and language varieties appropriate to subject-specific tasks that students need to acquire for their subject course. The third type that Dudley-Evans proposes for teaching academic writing involves, what he calls, the writing club. The aim of the writing club is to be run by graduate students in similar subjects which means that they have some knowledge about the different topics presented to them by the learners. Dudley-Evans believes that peer review is helpful in providing more feedback to learners for it helps in emphasing the reader's needs.

This proposal by Dudley-Evans is, I believe, a very useful approach for the teaching of writing. This proposal can work if the environment is suitable for applying these three methods of teaching, (i.e. enough staff, good relation with staff from other departments, and students' willingness to do peer work). These methods, I believe, might be difficult to be implemented at JUST for many reasons, such as: limited number of staff, large number of students and an overload of work for subject teachers. Furthermore, students at JUST do not know how to work in groups and the introduction of this method in the past has reflected some discomfort. Some students felt uneasy over having to work with students from the opposite sex. Team work as well as clinic discussions can be introduced by emphasizing the importance of having the point of view of the reader. Robinson [131], p. 105 found that such 'surgery hours' proved to be important in providing "a dialogue, and general hints on drawing up a plan". She believes that such 'surgery hours' are useful in helping students to read their work more critically and in showing them how to go about improving it.

Similarly, in his article on "negotiating the syllabus", Frodesen [173] argues for the teaching of genre conventions. Although her suggestions are geared towards postgraduate students, I believe that such suggestions are as valuable for undergraduate science students at JUST, especially since they (JUST students) and their subject teachers have been complaining about writing abilities. Such complaints include text organization and coherence of argument presentation. There-

fore, I believe that Frodesen's [173], p.332 suggestion of the writing tasks that can "help to initiate writers into their field-specific research and to provide them with relevant writing practice can best address the needs of this NNS population". Frodesen's suggestions seem to be of value for they would enable students to be more involved as well as to be more familiarized with the scientific conventions and especially the conventions of their specific disciplines. Such suggestions, I believe, will be met with positive response from both students and subject teachers for such a genre-specific course will meet the motivation and the expectations of such students.

Another piece of research that advocates the use of a genre analysis approach is the one that is presented by Jacoby, Leech and Holten [172]. They have designed a course for teaching undergraduate science majors focusing on the different parts of the research report — introduction, methods, results, and discussion. The presentation of each new subsection is ordered according to its conceptual and communicative difficulty. The teaching of these different parts is based on analyzing authentic material which, I believe, is vital in teaching scientific writing. Their argument [172], p.353, in which they consider that each section "has its own unique set of conventions and patterns", is vital for the EAP teacher to take into consideration.

They believe that it is important to stress the fact that revising should be done in order to revise for meaning beyond the sentence and vocabulary level. They used for this purpose tasks in which they asked students to rearrange and reorganize activities and made sure that teacher-guided revisions of sample drafts were provided. Since the most difficult task facing both novice and expert science writers is the shaping of scientific discourse in order to meet the different expectations of potential readers and knowing how to convince them, it is clear that this aspect should be given more practice and discussion. In order to equip students with the necessary skills that help in shaping scientific discourse, they need to learn how to

> interpret raw data and observations, synthesize previous research findings and methodologies, evaluate research findings in order to distin-

guish those that are significant from those that are nonsignificant and contrast present research findings and methodologies with those of previous related studies. [172], p. 356.

All of these strategies play an important role in convincing the potential reader of the significance of the research presented. These strategies are essential in the teaching of research writing and will be part of the suggested syllabus.

Increasing the independence of students is encouraged by the types of tasks which foster this kind of autonomy while working through the process of planning, executing, revising, and evaluation. An emphasis on scientific discourse conventions is essential for both undergraduate as well as graduate science students. It is important for students to acquaint themselves with the different conventions of each part of the thesis/research genre during their academic life at the university and to do so right from the beginning.

This kind of text type teaching is what students at JUST need for it will help in developing and enriching their repertoire of scientific patterns. More exposure to scientific genre and analysis of such texts is needed to help students understand how such texts are constructed. Besides the teaching of the formal aspects of scientific writing, a genre-focused approach should also address the needs of novice scientists as developing writers in terms of idea generation, critical thinking, manipulation of texts and information to meet the different demands of audience, and revising strategies beyond word and sentence level.

In his article on "Communication Strategies", Sionis [189] stresses the importance of teaching scientific genre to science writers whose mother tongue is not English. He investigates some research articles which were rejected for publication. These articles were written by French scientists who had already published some articles in French. The main reason for rejecting these articles is the "lack of situational awareness" in terms not only of their "[adherence] to the written genre of specialist scientific articles in general but also to the particular style of a given journal" [189], pp.99-100. Some of the reviewers' comments on those rejected articles include comments such as "*discontinuity in the argumentative process*", "*lack*

*of consistency*", and "*failure to convincingly introduce, link or conclude various key-elements in several parts of the demonstration*" [189], p. 101. Sionis relates the negative view of such articles to the fact that those scientists consider content to be much more important than form. In his investigation of research articles by non-native speakers (NNS), Gosden [190] feels that the quality and the importance of such research might be disguised by the quality of the way such research is reported.

The next section will discuss a proposal of a course design for writing scientific reports. This course design will be proposed to be taught at JUST as a modification to the present course (112). This course will help in establishing another course that will be designed especially for teaching thesis writing for postgraduate students who are doing their masters degree at JUST.

## 5.3 Learning-centred, Genre-centred, Reader-centred Approach to Course Design

The main objective of this course is to equip undergraduate students with the lexicogrammatical and the rhetorical conventions of writing scientific research right from the beginning. This course is different from the one that is being taught at JUST in its emphasis on the scientific conventions by using authentic material. The course that is being taught at JUST does not involve students with analyzing authentic material and it is more like a manual of instructions for research writing. Students need to be more exposed to authentic scientific discourse, and to analyze it focusing on different aspects, such as scientific conventions, scientific rhetoric, and lexical phrases unique to each section of the research report. Although the issue of teaching authentic material was for a long time disregarded since teachers feared that the attention of students would be geared towards content instead of language skills, English practitioners and linguists started to realize the vital role of using authentic material especially in a scientific environment.

Researchers have realized that there is a dilemma concerning material chosen for teaching. Mohan [155], p.1 has pointed out this dilemma in saying that: "in subject matter learning we overlook the role of language as a medium of learning. In language learning we overlook the fact that content is being communicated". Both of these approaches argue for their merits in EST (English for Science and Technology) material production. It is surely the case though, that the content approach is more favoured by science students since they find it more interesting and much more challenging.

Kuo [191] argues that an eclectic attitude towards materials development might be more appropriate for he believes that this attitude gives more flexibility to the language teacher to adapt materials suitable for his/her own teaching objectives. He believes that EST textbooks may serve as a kind of data bank which provides the language teachers with a great variety of texts, skills, problem-solving tasks, and classroom activities. Some studies, such as the one by Kennedy and Bolitho [192], show the danger of using simplified materials. They believe that such simplified material often lose some meaning with the simplification, or that they lack the authenticity of real texts. They believe that the important factor in using any material for teaching is *relevance*. The chosen material should be relevant for the teaching purposes.

Authenticity of EST (English for Science and Technology), Kuo [191], p.177 believes, "should be considered in terms of the EST environment, the learning situation, learner characteristics and the representativeness of the materials of scientific communication". He goes on to argue that "materials must represent appropriate language use in the particular EST environment". The context in which teaching takes place is vital in determining the material used for teaching. If there is a need for any kind of simplification of material, Mountford [193] and Madsen and Bowen [194] believe that a successful simplification would be one that is agreed upon by both language and subject specialists.

All studies on EST material reflect the importance of cooperation between language and subject/content teachers in order to achieve the highest level of proficiency. In a study by Snow, Met, and Genesee [195], they claim that the

teaching of language can be done by joint work by both language teachers and content teachers in determining compatible language and content objectives. In their study, they argue that such objectives can then be taught concurrently so that students will have the advantage of learning not only language, but also how to apply it appropriately in relation to the content of their own subjects.

The above approach, I believe, can only be applicable in an environment where students in the English classes are/can be grouped according to their specialties. Therefore, this approach is one that can not be implemented at JUST given the limited number of staff and the large number of students.

It has been established in the previous chapters that both students and subject teachers at JUST are dissatisfied with their students' writing abilities. Therefore, this course design is going to be geared towards providing students with the essential tools that enable them to be better writers as well as being more autonomous.

Since the skills of language all go together, this course design will emphasise the importance of the integration of skills and the importance of making them work together. Such integration is also important in providing variety, especially since variety has been proved to be [185], p.76 "a vital element in keeping the learners' minds alert and focussed on the task in hand". Processing the same information through various skills is believed to be [185], p.76 "one way of achieving reinforcement while still maintaining concentration". This proposal will draw from the previous approaches that have been discussed so far.

This syllabus will consider the learner as part of a social context. It will focus on analysing authentic materials to ensure better understanding of how scientific conventions are used and constructed. Clinic hours will be an important part of the course for such a method encourages group work as well as taking the reader and his/her views into consideration, as has been reported by Robinson [131] and Miller [177]. Reader judgement has been proved to be vital in improving the learners' critical thinking and their writing abilities. Miller [177], p.17 believes that such "*consultation hours*" should not be downplayed because the results are worthwhile. She believes that such a method helps to provide students with the immediate feedback needed for their progress.

This new shift in approach to the teaching of writing with its emphasis on the writer, genre, and the reader stems from dissatisfaction with previous approaches. The writer, in this approach, is perceived in a broader context involving a concentration on the process and the different stages of writing, such as pre-writing activities, drafting, editing, and re-writing [131]. Research also shows that the process of writing differs depending on the writer and on the task involved [196], [197], and [198]. In his article which focusses on the social constructionist perspective, Gosden [174] claims that the writer needs to be viewed as part of the social context.

In its emphasis on genre, this approach will highlight the different functional varieties, such as scientific varieties, and so will aim at helping writers in identifying the features of style characteristic of the writing community within which they hope to function [199] and [95]. Consideration of genre suggests appropriate ways of constructing writing for particular purposes; it offers models of good writing and helps in developing the writer's critical thinking.

The factor of taking reader into account will gain ground as well in this approach since the activity of writing is perceived as communication and negotiation between writer and reader. The reader will be considered as a vital part of this communication since the success of any piece of writing is assessed from the reader's perception. Bizzell [200] asserts that academic writing should be viewed in terms of the responses to favoured kinds or modes of communication and the conventions of the discourse of a particular community. Glatt [201], p87 claims that "the more sensitive a writer is to his audience and to the resources of the written language for expression, the more effective the communication will be". Clearly, the writer should be aware of the presence of the reader and take into consideration the background knowledge of that reader while writing [202] and [203].

As a result, a learning-centred, genre-centred, and reader-centred approach will be adopted here in this syllabus for I believe that students' difficulties (for instance, of the kind discussed in chapter four) stem from the fact that these aspects were either not taken into consideration or were inappropriately presented. The course

in research writing will be designed to cover twelve weeks of teaching. Accordingly, the syllabus will consist of twelve units, with each unit to be covered roughly within a week. Each unit is going to be distributed over three contact hours a week.

Because each section or subsection of the research has its own set of conventions and patterns, the syllabus will be divided according to these sections. This syllabus will incorporate different strategies needed for the development of writing skills. Such strategies will include prewriting, planning and organizing, information review and synthesis, as well as content and rhetorical analysis of authentic models [172], p. 355. In this way the learner will be involved in interpreting authentic material, synthesizing information from previous research and evaluating other works in order to distinguish what is significant for his/her work and what is not, and organizing all this information in a coherent way in order to convince his/her reader of his/her argument.

## 5.4 Introduction to Course Syllabus

The main aim of this course is to equip undergraduate students with knowledge of the textual conventions of the research report. The syllabus will aim at providing students with the necessary strategies that will help enriching their writing skills. The linguistic, conceptual, and rhetorical knowledge of each section of the research report will be considered in this course. The material will be designed to meet the objectives of these considerations.

Introducing the textual conventions of the various subsections of the research report will be considered a vital objective of this course. The text format of the research report (lexical, grammatical, sentence, paragraph, subsection, and the text as a whole) will be also of vital importance. Since the analysis has shown that students at JUST have little prior exposure to the different text types which they must conform to during their university life, authentic texts representing each section will be presented.

Because the process of writing is a complex task in its various stages of planning, translation and revising [54], the syllabus will be designed to cater for these different processes to ensure a maximum level of understanding of how scientific writing is manipulated and constructed.

In the planning stage, the tasks given will draw on the writers' own knowledge of the topic, which might be small with novice scientists, and on their skills in gathering and organizing certain information. The tasks will take into consideration the writers' inner knowledge of the world and will emphasise the importance of the presence of potential audience.

As for the translation stage, tasks will be designed to provide learners with the opportunity to learn the different conventions related to the various sections and subsections of the research report that corresponds to the information in a writer's repertoire.

The revising stage will be discussed through different tasks which emphasise the importance of revising beyond the sentence level through reorganization activities and through guided revision by the teacher of sample drafts. Tasks will be designed to ensure a revision for meaning and for the adherence to language and scientific conventions. Peer evaluation and revision will be encouraged as well as the teacher's own revision and evaluation during *clinic hours*.

It will be made clear throughout this syllabus that writing is not a linear activity. On the contrary, writing will be viewed and perceived in a non-linear fashion. Science writers exhibit various behaviours, from linear composing to detailed planning to recursive and detailed revision [197]. Therefore, the development of strategies used by skilled writers will be incorporated in the syllabus in tasks that require going back and forth to make sure that the synthesis of material is appropriate.

The most essential methodology that will be emphasized in the teaching of writing in this course will be the major significance of appreciating the writer-reader relationship as being the first step, even before putting pencil to paper. To achieve this goal, different strategies which can help in eliciting the awareness

of the novice science writer of potential audience will be presented. Different tasks focusing on activities such as prewriting, planning, organization, information review, synthesis, as well as content and rhetorical analysis of authentic texts, will be used in this course. Students will be encouraged to self-assess their own work and that of their peers, using a checklist [172]. Before presenting the syllabus for teaching writing for undergraduate students at JUST, I would like to consider the teaching situation in order to show the various constraints and limitations.

English classes at JUST consist of science students from all departments. There are only five English teachers operating in the English section. Each teacher teaches 12 hours a week, i.e. 4 courses. Each class consists of about 50 students which means that each teacher is responsible for approximately 200 students. Similarly, the members of staff in other departments have an overload of work. The method of teaching in all the departments seems to be *spoon feeding.* Students rely a great deal on their lecture notes.

The teaching situation, as described above, puts some constraints on the English teacher. The first one is having a large number of students to teach. The ideal situation for teaching writing would a small group. In this case, and in order to make the best of the situation, having *clinic hours* in order to ensure that students get individual attention and help might be very beneficial. Having advanced students to work in such a *clinic* would be useful as they would contribute to the discussion as readers of the students' writing.

As for the other constraint from having a limited number of staff, teachers can help in developing students skills of how to be autonomous writers. Another possible method is to ask students to read each others work and comment on it. *Clinic hours* should be helpful as well in this respect.

In order to increase cooperation with other staff in the subject departments, language teachers should have at least a few meetings with them to ensure that their objectives are somehow compatible. Language teachers can sit in on the classes of the subject teachers to make sure that what is used in the English classes adheres to the conventions of the scientific community. Also, it would be useful, perhaps necessary, for subject teachers to follow up what their students

have learnt in the English classes in terms of evaluating their work. This follow-up is very important so that students would take the English classes more seriously, since carelessness of students concerning their English classes is very problematic for the English teachers to overcome.

The course content will start by focussing on the strategies needed to learn the different rhetorical conventions essential for writing up the discussion section for it seems to be the most problematic and most difficult section in any report/research writing [204]. The primary aim of this syllabus will be to enable students to use information from a variety of sources and to learn how to integrate such information into writing that is coherent in its presentation and that follows the appropriate conventions. Providing students with pre-writing activities, such as global level, content related, order-related, and language-related activities will be considered to be of vital importance to the teaching of writing [205].

Adegbija [205] believes that activities help to actively engage learners in a creative process of constructing and reconstructing before performing a writing task. Pre-writing activities, Adegbija believes, help in stimulating and motivating students, and such activities are considered to be more natural and more relevant to what is being taught in the different disciplines of the learners. She found that the problem in the English for academic purposes (EAP) environment is that EAP teachers over-emphasize the teaching of the language skills at the expense of the other more essential skills needed by the learners, such as the different strategies needed for assembling material and the different processes involved in the production of a coherent piece of writing. Therefore, strategies that will be discussed in this syllabus will include the different strategies needed to enable learners to produce a well organized, coherent research report.

Besides the work that is going to be conducted during class hour, there will be clinic hours to be run jointly by EAP teachers as well as third and fourth year students from different specialties who might be able to help in terms of looking at the information involved in the content. Because it would be difficult to have joint teaching by both the subject teacher and the English teacher, a continuous consultation with the subject teachers will be considered vital to make sure that

the scientific conventions that are taught in the English classes are acceptable and appropriate for the scientific community. A follow up of students' performance in the later years would be helpful for evaluating the success of the English course for the teaching of writing.

## 5.5 Research Teaching

### 5.5.1 Objectives

The main aim of this course will be to teach novice science students at JUST the main principles of writing scientific research. It will focuss on the conventions of the different sections of a research report. It will also aim at familiarizing students with the linguistic and the rhetorical domains that distinguish research writing from other text-types.

By the end of the course, the concerned students should be able to submit an acceptable level of research report that adheres to (or approaches) the conventions and rhetoric of the scientific community. Emphasis will be on the different sections of research report: introduction, discussion, and conclusion. The conventions of each section will be explored and discussed. The use of the different strategies in research writing will be examined, such as taking notes, summarizing, quoting, and paraphrasing.

The different rhetorical and text-structural functions will also be introduced and manipulated by using material that deals with such aspects such as: problem-solution, comparison and contrast as well as classification. Tasks will focus on organization of the text under discussion focusing on text development as well as on overall structue. A focus on what makes the text cohesive and coherent will be examined through activities focusing on the cohesive links which realize the relationships between pairs (and whole paragraphs) of sentences, and the importance of the transitional phrases that work at paragraph boundaries.

The syllabus will, ofcourse, emphasize the importance of exploring the function of lexicogrammatical items within context. Emphasis will be on the problematic areas discussed in chapter four: reference, conjunctives, collocation, Theme/Rheme, as well as sentence relations.

Reference items will be focused on in the different texts and activities that will be used in this course. The importance of these reference items and their function in creating cohesion in texts will be explored and exemplified. Students will learn that the realization of reference by means of lexicogrammatical items such as proper nouns, proper names, and articles will help in creating cohesive reference chains and in directing the reader throughout the text in keeping track of referents in texts. This will ultimately help students see the vital role of these reference items for the readers to perceive the text as a coherent discourse. An emphasis will be given also on the definite article *the* since it causes a lot of problems for our students and the difference in the use of these articles in English and in Arabic will be put forward. Students should learn when and when not a reference can be used. Usually, referents hark back or forth to something that exists in the text, and thus students should learn the importance of this kind of cohesive chain. It will be emphasized that these referents retain a systemic referential relationships in thematic patterns which is essential in helping the reader to follow the organization of the text within paragraphs and across paragraph boundaries.

The appropriate use of conjunctions will also be stressed through several analyses of authentic texts. The function of these conjuntions will be discussed and the misconception, if there is one, that these conjuntions can be used alternatively will be clarified. The importance of using these devices in creating texture in the text will be explored and exemplified. Their function in providing meaning to the established relations will be discussed and the students' awareness of the various functions of these linking devices will be taken into account. It will be emphasized that, like the references, these linking devices will help in facilitating comprehension since they indicate the type of meaning relation intended by the writer. The different types of conjunctions: additive, adversative, causal, and temporal, and their subdivisions. Their different functional, semantic and syntactic uses will be

manipulated and exemplified. Their importance in developing the argument in the text will be shown by referring to authentic texts. It will be made clear that the over-use of these devices will produce a text that sounds artificial and far from natural.

The use of correct collocation will be another important input of the course content. It will be emphasized that the natural use of language involves the use of the right collocation. Since this area seems to be a serious problem for our students, it will be recycled in almost all the units. This will be done by examining authentic material and emphasizing the collocational items in that text. It is assumed that by using authentic material, students use of collocation will improve, especially since the correct use of these collocations is context-bound. Consequently, students will have the chance to study authentic texts and to examine the mutual expectation between certain words and expressions, and also between expressions and the structure they occur in. Students will be warned not to memorize words without knowing how and when to use them. Where relevant, a discussion of the different uses of these items in both English and Arabic will be discussed and exemplified. It will be made clear that these items are as important as the previous ones in creating cohesion in the text. There will be a need to find and/ or develop study texts and materials for use in the course. The emphasis will be geared towards the need to prepare linguistically-based materials appropriate for students' needs. There will be a need to look for material that is contextualized and aims at developing the communicative competence of the learners. In addition, it would be important to train and equipp language teachers with appropriate teaching strategies that adhere to the teaching of contexualized materials.

The importance of following a thematic pattern will be of importance in the content of this course. The importance of the *Theme* and *Given* and *New* will be explored. The importance of structuring the text in terms of Given and New and its reflection on what the writer is intending to say will be of great importance. Students will analyze texts to see the importance of Given information in establishing the framework for what will follow. It will be emphsized that this area is a vital resource in constructing and developing an argument. The importance of

Theme/Rheme, Given/New in creating a smooth flow of discourse will be emphasized by examining both types of texts (good and bad). It will be clarified how important thematic progression is in keeping the text cohesive and coherent and so facilitating reading intelligibility. The different types of thematic progression will be discussed: linear thematic progression, thematic progression according to a continuous theme, and thematic progression with derived themes discussed in chapter 4.

The final area that will be of importance to the input of this course, is the examination of sentence relations. This area is of vital importance since through sentence relations, writers can show the development of their argument. The realization of a potential reader will be considered in this course and the relation between writer-reader will be exemplified. The different rhetorical patterns will be part of this content to orient the students to the importance of each pattern and its function in developing his/her argument. The different rhetorical or textual patterns that will be discussed include: problem-solution, comparison and contrast, cause-effect etc.

### 5.5.2 Methodology

The methods used in this syllabus aim at teaching research writing and raising learners' awareness of the importance of the relationship between writer-reader. Therefore, team work will be encouraged as well as peer reviews — both are considered to be of vital importance for this purpose. The general methodology for each writing activity will be as follows: a pre-writing stage will be considered very important, and therefore explorations of the rhetorical structure of the text under study will be discussed through guided exercises in order to raise students' awareness of the rhetorical orientation of the text, its overall organization, the functional use of cohesive links, as well as the conventions that characterizes this text.

In order to achieve success with such a methodology, guided and controlled tasks will be designed to guide learners and to give them practice in how grammat-

ical and lexical structures are used in constructing scientific discourse. Practice on taking notes, summarizing, quoting, and paraphrasing will be discussed through examining scientific paragraphs and/or passages. All such skills will be explored by deconstructing authentic texts to achieve the target objectives.

The general strategy of going about such activities will be as follows: students will be given a text to read (or to listen to/ or a video to watch). Before asking them to read (listen or watch), there will always be pre-reading questions so as to stimulate students' own thinking on both the topic and aspects of its language. Then, they will be asked to read, listen or watch and to take notes which will be compared with the notes of their peers. These notes will be discussed and afterwards they will be used as the basis for their writing to be done individually. Rhetorical functions as well as the linguistic aspects will be discussed along with each specific text to make sure that students realize what is involved in such scientific texts and how they are constructed. Their writing assignments will be collected, evaluated by the teacher and discussed afterwards in the class hour, especially the most difficult (here difficult means problematic) ones. Further discussion and help will be provided within *clinic hours.*

By the end of the term, students will be expected to hand in research reports. The writing of these reports will be done throughout the term, and the students' knowledge of the rhetorical and lexicogrammatical conventions will be expected to be reflected in their reports. The linguistic levels will be assumed to develop as the term proceeds. Students will be required to hand in their research reports one week before the term ends. These reports will be expected to follow the different conventions and rhetoric that students will be learning throughout the term.

Throughout the term, students will be given enough time to discuss their chosen topics as well as their outlines. The different stages of their research writing will also be discussed with them in class as well as individually during the clinic hours.

### 5.5.3 Follow-up and Review

The follow-up will be perceived as an ongoing process until the students hand in their reports for assessment. This follow-up will be done in class hours by the teacher and their peers. Further feedback will be provided through the clinic hours by the teacher and by the peers, which will help students think more critically about their work as well as considering the point of view of the reader. A sample of work (both bad and good) will be exemplified and discussed. The discussion will include what makes the good text *good*, and what makes the bad text *bad*.

### 5.5.4 Material

Excerpts from scientific material will be the major source for creating writing material and for practices. Different sections of the research report will be presnted for analysis as well as practise. Consultation with subject teachers will be important to decide on the material chosen for teaching.

### 5.5.5 Assessment

The assessment of students' research report will be carried out by examining the text as a whole. Texts will be assessed in terms of their cohesion and coherence. A focus on text development will be a major aspect of the assessment. Examining text development will be essential in the assessment since it covers all of the problematic linguistic elements discussed in chapter 4, such as reference, conjunction, collocation, Theme/Rheme and sentence relation.

Besides the assessment that has been presented in chapter 4, subject teachers will be asked to do a follow-up assessment for their students to make sure that students have developed the skills that help them in tackling the writing in their subject courses. This can be done by using a check list of items that have to do mainly with content and the reading intelligibility of the reports. This feed back from the subject teachers will be very helpful in assessing our suggested course. It

will be important in evaluating the prons and cons of the English writing course and help in improving it further more.

It will be suggested to give the research paper 40% of the total mark, 25% of the total mark to go for the first progress test and another 25% to the second progress test, and 10% to go for participation and involvement in the writing up of the research report. The following section will present a description of the twelve units that will comprise the course for teaching research writing and will be followed by some examples.

### 5.5.6 Description of Units

#### UNIT ONE

Unit one will start with an introduction to the course and a discussion of the different problems found in the analysis of this study. A general discussion of the different sections and aims of the course will be presented. If possible, students will be grouped into teams according to their subject matter so that they will be prepared to work together on their reports later on. If it is not possible to group students into teams according to their subject, then it might be appropriate to ask students to bring to the next class copies of material from their own textbooks, journals and other references to be collected by the teacher for investigation and for later use. This will help to get them into the way of searching for material. Students will be asked to start to think of a topic for their research.

The second session will concentrate on using authentic material as a task for reading on comparison and contrast, note taking, and then the use of these notes as the basis for comparison and contrast. Pre-reading questions will be important as a brain-storming activity that will stimulate students' own knowledge of the topic and of the language skills required for such an activity. This task will be done individually, and afterwards students will be asked to work in pairs to compare notes, and, finally, the writing will be done individually. After doing the piece of writing on comparison and contrast, students will be asked to read other students' essays and comment on them. This will be then followed by a discussion on the

notes taken, and on the written pieces focussing on the language of comparison and contrast and its organization. A focus on the reference and cohesive markers, such as definite reference, conjunctions, collocation, theme/rheme and sentence relation will be explored and discussed. This focus will be done on each text under discussion. A discussion of peer comments will be followed and students will be asked to rewrite their assignments, taking into consideration their peers' comments, as homework, either to be collected the following class for evaluation by the teacher, or to be discussed during clinic hours.

During the third session, a discussion of students' writing on comparison and contrast and the difficulties they had writing up this task will be carried out. Discussion of the function of the signal words, their uses in different positions, and the organization of students' writing will be firstly done during class hour by groups of students and then discussed with the teacher. The strategies of data collection will be discussed here. Strategies, such as summarizing, paraphrasing, and quoting should be discussed right from the beginning and exemplified using authentic texts. Afterwards, students will be grouped and given several paragraphs to be used as source material for paraphrasing, summarizing of certain paragraphs, and to write a quotation. This will be very helpful for involving students in the actual strategies as well as encouraging them to work together to find answers for certain tasks. This involvement in using authentic texts should enable them to apply these strategies to their own course subjects.

**UNIT TWO**

In the first session of unit two, students will be given a text on classification and will be asked to read through and find out the words that collocate. After words their finding will be discussed in groups and then with the teacher. Discussion of these collocational items will be presented and students will be asked to give general examples. An explanation of how these collocational items differ in both Arabic and English will be given and exemplified. The function and the uses of these collocational items will be discussed. More practice on collocation using other text/s will be given if time allows it.

During the second session of unit two there will be more practice on note-taking

from an authentic text that deals this time with classification. The same procedure followed in conducting unit one will be used here. Students will be asked questions on the topic and the language skills involved to see how much they know and to prepare them for the next task. Questions on the type of classification that is used in the text under discussion will be explored. Then, students will be asked if they can think of other ways of presenting classification. Examples of classification will include: non-verbal data such as tables and diagrams. The discussion on classification will also be explored by examining scientific authentic texts. Different activities will be given here. Students will be given texts on classification and will be asked to transfer the classification into a table or a diagram. Other practice will be by giving students a table that contains classification of some sort and ask them to write a paragraph on classification following the discussion and the analysis that has been done previously.

**UNIT THREE**

At the beginning of the first session, students will be asked to copy an outline from an original research report to be discussed in the following session. The focus of the discussion in this unit will be on the different conventions of each section of the report. The language of the different sections will be presented using authentic material and students will be asked to read through these texts individually first and then to discuss the characteristics of each section. A general discussion with the teacher will then follow.

In the second session, students will be given texts and the same procedure used in unit one will be followed here. The text this time will be used as an source material for a summary. Thus, students will be asked to read the text, take notes and then use these notes as the basis for their summary. A discussion of the notes taken will be carried out, especially for those students who find this task a bit difficult and struggle in finding the key points. These summaries will be read first by their peers and, according to their comments, the summaries will be re-written and then collected by the teacher for evaluation.

In the third session of this unit, students will have more practice on types of

language of the different sections as well as on summary writing for their vital importance in writing up of their research.

**UNIT FOUR**

More practice will be given on notemaking based on texts discussing comparison and contrast. The same method used in unit one will be used here. The second session will include more writing on comparison and contrast and an examination of the references used, collocation, conjunctions, and sentence relation will be discussed. In the last session of this unit a recycling of summary writing will be presented.

**UNIT FIVE**

Students will be asked to hand in their table of contents. This unit will examine the different types of text organisation by analysing texts that discuss the different ways in presenting purpose and method. The lexicogrammatical elements involved in this type will be discussed and afterwards students will be asked to write a paragraph on this type.

During the second session, another type of text organization will be presented, this time focusing on opinion and justification. A focus will be given to the different ways of averring or detaching one's self from the discussion. Discussion of presenting other views will be important for students to learn how to support their arguments by referring to other relevant studies.

More practice on the above two text types will be given in the third session of this unit.

**UNIT SIX**

In this unit, different types of data comment will be discussed such as the use of pie charts, bargraphs, graphs, flowcharts etc. and the use of each of these non-verbal data and the comments on them will be the focus of this unit. Again, the presentation will start by analyzing authentic data and focusing on the type of language used and the argument presented. This will take the period of three sessions.

**UNIT SEVEN**

Recycling of some of the previous skills, especially paraphrasing and the mechanics of quoting.

**UNIT EIGHT**

Examining the students' own writing will be the focus of the first session of this unit so as to identify what problems still exist in their writing and to be able to help them before the submission of their research papers. Of course, students will be helped throughout their writing by making use of the clinic hours.

Another focus in this unit will be given to the introduction section of the research paper as a recycling activity, especially since students find this section to be a problematic one. Following Swales's [95], and Dudley-Evan's [204], discussion of the different moves will be presented and exemplified. Different expressions of certainty and uncertainty will be discussed and their function in averring or detaching one's self will be further practiced.

**UNIT NINE**

This unit will be devoted to discussion the different methods of revising. These methods will include examination of the appropriate use of references, signal words, punctuation, verb use and to examine the flow of written texts. This will be done by giving students texts with gaps in them to fill in the appropriate linking words. The same will be done for the use of reference. As for punctuation, students will be given a text where some of the punctuation marks have been removed and will be asked to puntuate the text. In order to examine the flow of the organization of the text, students will be given two texts, one that lacks signposts and the other with the signposts in, and a discussion of the importance of using linking words will be followed. Examination of students' own work can as well give the same purpose.

**UNIT TEN**

A prsentation of two texts, a bad one and a good one, will be the focus in this unit. Students will first be given a copy of a badly written text and will be

asked to work in groups to see if they can figure out what is wrong with this text and to suggest ways for improving it. This text will suffer from the inappropriate use of different items, especially reference, collocation, conjunctions, Theme and sentence relation. The purpose of this task will be to make sure that the students have acquired some knowledge in handling such problems. The discussion of these items will take the whole period of three sessions.

In the last session of this unit, a discussion of the language used in oral presentation will be given since students will be expected to give a short presentation of their reports.

**UNIT ELEVEN**

Students will be asked to hand in their reports to the teacher for assessment. A general discussion of the pros and cons of the course and possible pertinent difficulties will be discussed. Students will be asked to fill in a check list that gives them the main items which they should cater for before handing in their reports. Students will be asked to give a short presentation of their reports.

**UNIT TWELVE**

The presentation of the reports will be carried out also in this last week.

### 5.5.7 Examples of Different Sections of the Research

In this section, I will present some *goood* examples of how to go about the different sections of the research report. First of all two sections of a report that has been written by one of JUST students will be presented. Then some excerpts of certain sections of research reports that have been used by other researchers will be explored. The student, whose material is being used here, is in his first year (second term), studying medicine. Two sections of his report, which is on "Plastic Surgery", will be presented here, the first one is the introduction section, and the other one is part of the discussion section. No changes have been done to the text apart from numbering its sentences for easy reference.

(1) It is convenient to begin such an unspecialized report on plastic surgery by defining the term itself.

(2) Technically speaking, plastic surgery refers to the surgical modification of part of the human body in order to give it a more acceptable appearance.

(3) However, as plastic surgery is becoming increasingly more complex and elaborate, this technical meaning no longer thoroughly describes the expression.

(4) A more precise definition would be that plastic surgery is concerned with the aesthetic as well as the functional reconstruction of parts of the surface of the body (as plastic surgery rarely involves parts of the body deeper than the skin).

(5) Furthormore, plastic surgery may well be divided into sub-fields as each is becoming more of a unique procedure in itself.

(6) The purpose of this paper is to allow the reader to be able to answer the question: what is plastic surgery and how is it done?

(7) Therefore, in this paper, I will describe the different types of plastic surgery and give a brief outline of some techniques involved in this art.

(8) Afterwords, I will make a short attempt to describe the increasing popularity of plastic surgery both in the world and in Jordan.

It can be seen that the student's writing in the above text is clear and easy to follow what he is trying to say. It must be mentioned here that this student has graduated from a private highschool which might has an effect on his style of writing. In private schools, students are usually much more exposed to English, and are required to do much more writing. Now if we examined the above text, we can see that the student has started by giving a definition of the concept of "plastic surgery" which will help the reader in understanding what exactly the writer is trying to say. The reference to his report as "an unspecialized" one shows that the writer has some kind of reader in mind. Then, he goes on to give

various definitions of "plastic surgery". The use of signals is also helpful in this piece of writing that clarify the discussion and connect sentences to each other. For example, the use of *however* in sentence (3), introduces a contrast with the definition that has already been introduced. Again, the writer uses another signal in sentence (5), *furthermore* that shows more information about "plastic surgery" is on the way.

The second pargaraph of his report starts by indicating the purpose of the research report. This gives a clear idea about the content of the report, and so the reader will know what to expect. After that, the main ideas in the report are clearly signalled (types of plastic surgery, techniques, and its situation in the world and in Jordan).

This example can be discussed along with students to raise their awareness of what make a good report "good". Students can be given a copy of this section to read and discuss together, and then to answer questions like:

1. Why does the writer start off by defining plastic surgery?

2. What is the purpose of using *however* in sentence 3?

3. Why does the writer use *furthermore* in sentence 5, what is

the funtion of this word?

4. How does the writer present the content of his report?

By exploiting the text in the above way, students are expected to realize how a good introduction is written and what information should be included in it. Although such a discussion will not involve the different processes included in the writing up of this introduction, students at least should be able to recognize the qualities of good writing. A comparison of this introduction can be discussed along with another one that has problems to make a comparison between the two. In order to get students involved in the different processes involved in writing, they will be given certain tasks as have been described in the units to practice these various processes.

The discussion excerpt has been used by Dudley-Evans [204]. The excerpt on the introduction section has been used by Atkinson [170]. I will start with the discussion section since it seems to be the most problematic section in the research report. The following text will be analyzed focusing on the different lexicogrammatical aspects and the rhetorical functions that make the text a whole.

This text is an excerpt from the discussion section of an MSc dissertation written by a native speaker on "Conservation and Utilization of Plant Genetic Resourses". Only three paragraphs are used here. The sentences are numbered for easy reference.

> (1) The aim of this research was to study the viability behaviour of cocoa seeds, and to apply any knowledge gained to devising possible methods for long-term storage of the material for the purposes of genetic conservation. (2) Various aspects were examined, with particular emphasis on the factors known to prolong viability in orthodox seeds, namely reductions in moisture content and temperature (Roberts 1960 and 1961; Roberts and Abdalla 1968; Harrington 1973) and oxygen levels (Roberts 1961; Roberts and Abdalla 1968; Villiers 1973) and on the possibilities of storage of seeds fully imbibed (Villiers 1973 and 1975; Villiers and Edgcumbe 1975).
>
> (3) Firstly, an examination of the reaction of the seeds to drying revealed that they may be reduced to a lower moisture content than previously reported, and still survive. (4) Hunter (1959) and Ashiru (1970) both reported that seeds with or without testas could not be reduced below 50% + 2% moisture, without serious loss of viability. (5) Since Hunter (1959) also reported that his seeds without testas had an initial, unreduced moisture content of 50.02%, then this implied that seeds without testas could not be dried at all without adverse effects. (6) In this study, seeds after removal of testas were found to have initial moisture contents of between 37.94 and 44.57%, for different seed batches. (7) This range may have been due to the fact that

various amounts of desiccation occurred during transport of the seeds to Britain, since some pods were only in transit for two days, while others took up to seven days to arrive. (8) This initial moisture level is also lower than that of Hunter (1959) and this may be because of differences in the cocoa genotype or clone used. (9) Hunter does not state the details of his material in this respect, but he may have used pods of a different clone form that used in this study, and it is possible that the initial moisture content varies with different types.

(10) It was found that seeds may lose moisture down to a threshold value of between 17 and 20%, before suffering damagy due to desiccation. (11) Desiccation damage occurred in both the cotyledons and the embryonic axis. (12) Cell contents pulled away from the cell walls, and condensed in the centre of the cells, and the pith region of the axis broke down completely at very low moisture. (13) Little attempt has been made in the past to explain why some seeds are recalcitrant, and non-tolerant of drying, while others are orthodox, and may be reduced in moiture content to very low levels, without adverse effect. (14) It is possible that the cell reaction seen here, in which the contents condense and leave the cell walls, may be a characteristic of recalcitrant seeds generally, while the cells of orthodox seeds may show a more generalized decrease in size, without such damage to the contents. (15) This hypothesis requires further investigation.

The above text can be explored and manipulated by giving students controlled questions which can help in raising their awareness of the different lexicogrammatical and rhetorical conventions. Examples of such questions are the following. The different moves that are implicated in some of the following questions are indicated within brackets.

I. **Orientation Questions**

1. Read through the text and provide a suitable title for it.

2. What section of the research report is being presented here? Why? Can you identify items and structures of language that helped you?

II. **Comprehension Questions**

1. What is the aim of the study? (AIM)

2. What were the criteria used in examining the viability behaviour of cocoa seeds? What are the points of reference? (WORK CARRIED OUT)

3. What references are used in this discussion? What is the purpose of using these references? (REFERENCE TO PREVIOUS RESEARCH)

4. What is the sequence used in examining the various aspects? What word/s indicated this sequence? (FINDINGS OF THE RESEARCH CARRIED OUT)

5. Find a statement of contrast; how is it expressed? (REFERENCE TO PREVIOUS RESEARCH)

6. According to Hunter (1959) and Ashiru (1970), could seeds with or without testas be reduced below 50%? Why? (REFERENCE TO PREVIOUS RESEARCH)

7. What is the result gained after having removed the testas? (STATEMENT OF RESULT)

8. What explanation has been given for the range of moisture in seeds? How is it expressed? (EXPLANATION)

9.In sentence 7, what other word/s can replace the expression *desiccation*?

10. What is the explanation given for the condensation of the contents in sentence 14? How is it expressed? (CLAIM)

III. **Questions on Orgnization**

1. How does the writer organize his information? Can you describe the sequence that is used in this text?

2. Why and How is the text divided into sentences and into paragraphs?

The above questions would help to raise the learners' awareness of the different functions of clauses in scientific writing. These guided questions would enable

learners to understand the content of the text as well as to see how it is constructed. Thus, lexicogrammatical items will be examined and at the same students will acquire an understanding of the content of these texts. Students will be asked to take notes on the text and to discuss the form that they will use in taking their notes. One possibility for such a form, in relation to the above text, might be a contrast between the present study and related earlier research. These notes will be discussed in class by the students and then they can be asked to use their notes in writing a summary of the text.

The different moves in the discussion section can be explained and discussed. Although there are no specific moves for the discussion section, the general moves can be explored. It has been found by Dudley-Evans that the major moves in this section include [204], p.224-225: introduction, evaluation, and conclusion. Dudley-Evans [204] believes that the introduction part of the discussion sets the structure for the whole discussion. This can be done by some or all of the following: restating the aim, briefly describing the research carried out, summary of methods used, restatement of previous research, a statement of the main results/findings, and detailed comments on the results and the writer's claim/s.

The second part of the research, the evaluation of results, Dudley-Evans [204] argues, can include a series of some of the following moves:

1. *Information Move*: in this move the writer presents background information about the theory used, the aims of the research, method/s used, and relevant previous research.

2. *Statement of Result*: this is often the first move in a cycle and is usually followed by other moves commenting on the result. The use of a numerical value, graph or table is referred to here.

3. *Finding*: the finding is usually followed by a series of comments. A finding is usually an observation arising from the research carried out.

4. *(Un)expected outcome*: this is done by a comment on the result being expected or unexpected/surprising or predictable.

5. *Reference to Previous Research*: this is done either by making a comparison between the research carried out or by using the previous research to support the researcher's claims/explanation.

6. *Explanation*: reasons for the results, whether they are expected or not, are usually given by the researcher.

7. *Claim*: this deals with the contribution of the research carried out and is usually done by making a generalization. Dudley-Evans [204], p.225 calls this a *knowledge claim*. Claims are usually presented cautiously using modal or the hedged phrases, such as: *there are possiblities*, and *it is possible*.

8. *Limitation*: some caveats are usually presented about the findings, methodology, and claim/s.

9. *Recommendation*: some suggestions for further research are often presented.

The above moves can be explored using the previous text again to orientate the students to the importance of these general moves in any research report. The key move cycles, according to Dudley-Evans, are statement of results, findings, reference to previous research, and claims. Other texts that deal with the discussion section can be used for further emphasis. This is only an example of how an authentic research report can be used to raise the learners' awareness of the various issues involved in scientific writing.

Coulthard [206] believes that the main goal of any research report is persuasion. The writer should direct his/her argument towards this goal, otherwise the whole argument will not be perceived as true. Coulthard [206], p. 193 outlines the persuasive goal of each section of the text as follows:

**Introduction**: The persuasive goal here is to indicate that the research taken is necessary on the grounds that there exist some gaps on a certain topic which needed further research to clarify.

**Method**: In this section, the writer usually tries to convince the reader that the research was well done in that the subjects represented the groups they were intended to represent.

**Result**: The writer in this section tries to persuade his/her reader that the statistical method used was useful and informative.

**Discussion**: Here, the writer tries to convince the reader that the results make sense and fit with previous examples of the research, leading to a consistent body of knowledge.

The next material that will be presented here considers the introduction section of a scientific report. The excerpt of this introduction has been used by Atkinson [170]. The following introduction has been taken from a journal article on medicine. The text has been taken as it is apart from numbering the sentences for easy access.

> (1) While dynamic exercise has been extensively evaluated in patients with congestive heart failure (CHF), many activities of daily living comprise both dynamic and static (isometric) exertion. (2) Previous studies in patients with a variety of cardiac disorders show that static exercise may increase systemic vascular resistance, which might be expected to impair cardiac performance in patients with CHF. (3) Vasolidating drugs play an important role in the treatment of CHF, but studies of their effect on exercise cardiac performance have focused on dynamic activity. (4) Therefore, we measured the hemodynamic response to static exercise in a group of patients with CHF and compared the results to a group of control subjects with normal cardiac function. (5) We then evaluated the effect of hydralazine on the hemodynamic response to static exercise in the group with CHF.

The above text can be also explored through different questions that can test the students' knowledge of the lexicogrammatical and rhetorical levels. The answers to these questions will indicate the different moves of the introduction. These different moves that are implicated by some of the following questions will be indicated within brackets.

I. **Orientation Questions**

1. What section of the research report is being presented here? Why? What language items that helped making your decision?

2. What is the topic discussed in the text? (ESTABLISHING THE TERRITORY)

II. Questions on Organization and Lexical use

1. Read through the text and underline items of collocation.

2. In sentence 2, why does the writer refer to previous studies? (REVIEW OF PREVIOUS RESEARCH)

3. What is the relevance between previous studies done on patients with a variety of cardiac disorder and the present study?

4. What is the function of the connector *but* in sentence 3? (SETTING UP A GAP OR UNEXPLORED AREA)

5. What is the function of sentence 4? (INTRODUCE NEW RESEARCH)

This kind of methodology in analyzing a text through guided questions is supposed to be helpful in involving students to discover for themselves the different moves, languge and rhetorical conventions used in each text. This approach, I believe, would be better than that where students are given instructions on how to go about writing a research. This approach is believed to help students make the discovery themselves as well as discussing what they have discovered amongst themselves. The practice in writing an introduction will come later in the discourse since it is usually the last section to be written.

The above two examples demonstrate how the authentic material that will be used in teaching research writing will be analyzed and explored. Each text will include questions similar to the above, each time concentrating on certain language and rhetorical functions. Such texts, as has been discussed in the units, will be the source material for extracting notes and for writing on the different rhetorical patterns. The text will also explore the different lexicogrammatical items focussing on the most problematic ones that have been found in this study.

There will be a general checklist to be used by students while assessing the work of their peers. This cheklist will include the following items.

**Checklist**

Readers' Name

Writers' Name

**Layout**

Is the information in the table of contents clearly and rightly presented?

Are the sections and the subsections clearly positioncd?

Are the paragraphs clearly separated?

Does the writer use the right spacing?

Does the writer present his/her bibliography appropriately?

**Suggestions:**

**Content**

Does the writer use quotations appropriately?

Is the non-verbal data clearly presented?

Does the writer use transitional moves appropriately?

Are the introduction and the conclusion sections clearly related to each other?

The above general cheklist should be helpful in motivating students to take part in the evaluation process and their comments could be helpful for their peers to take into consideration before handing in their reports. The help of students in this way will be of value in terms of getting them involved in the actual process of evaluation which could be helpful in developing their critical thinking. This kind of evaluation would eventually lead to students' autonomy. This is a vital goal in the teaching of writing in this course so that students can become able to handle their subject courses more effeciently and with a greater level of independence.

The follwing final chapter will summarize the findings of this study. The implications for pedagogical purposes and suggestions for further research will be outlined.

# Chapter 6

# Summary and Implications for the Teaching of Writing

## 6.1 Summary

This research has discussed and exemplified some of the fundamental theories and approaches that have been appeared so far in relation to the skills of scientific writing. A presentation of the processes involved in writing has been discussed and the importance of the different multifunctional aspects: interpersonal, ideational and textual, has been emphasised. The research also has stressed the importance of incorporating an investigation of both product and process. The investigation of the lexical and the rhetorical conventions has been a substantial input for the analysis of the data.

A discussion of some of the different methods used in analyzing written texts has shed some light on important aspects that should be taken into consideration while examining written texts. The methods that have been examined in this study include: evaluative text analysis, the predictive approach to texts, and genre analysis.

The evaluative text analysis in its emphasis on the intention of the writer and the purpose of writing has greatly contributed to the analysis of scientific written

discourse presented in chapter four. This approach emphasises the factors that make a text successful or not in its consideration of potential audience.

The predictive approach has also contributed to the present study in its emphasis on the importance of providing certain clues for the reader that can aid him/her in understanding the intended message/messages. This approach has also outlined when and how the writer can detach himself/herself from what is stated and when can s/he relate to it.

The approach of genre analysis has provided us with the importance of investigating the scientific genre and its conventions that are appropriate for the scientific community. It has a great use in emphasising the factors that contribute to the acceptability of texts within certain communities, and in this case the acceptability of the conventions for the scientific community.

All of these approaches and theories have enriched the present study and the analysis of scientific discourse presented in chapter four. The analysis draws on these theories as well as on the functional systemic analysis that has been a central resource in this research. These theories helped in developing a framework for my analysis. It is realized throughout these theories that any text can be seen in terms of its possibilities for multi-interpretation. Therefore, possible amendments to the analyzed texts are suggested for those problematic ones.

It has been found that the most problematic areas in JUST students' writing include problems such as: reference, conjunctives, collocation, Theme/Rheme, and sentence relations. It was found that inappropriate understanding of these factors deterred reading intelligibility. It seems that one reason for these problems is an interlanguage one, especially in the case of using the reference (mainly the definite article). Hatch and Long [140], p.8 believe that expectation (given our knowledge of the world) is necessary to account for choice of article. Another explanation of these problems might be related to the methods used in the teaching of writing in their emphasis on form rather than function and communicative competence. Celce-Murcia [207] believes that on problem arises from the insufficient or incomplete explanations of certain lingusitic uses. She argues that texts, reference grammars and studies by linguists may give us information about language

in context, but they are usually of hypothetical and intuitive nature rather than empirically verified fact. Therefore, the English language teacher, she believes, must be taught during training how to cope with this lack of information, and how to gather the relevant data and carry out the necessary research as a part of his/her job.

The analysis has also revealed how little these novice science writers have been exposed to scientific texts. The analysis reflects the importance of using authentic material in the teaching of research writing for science students so that students can be exposed to the nautral use of language in the scientific context. Authentic material can be used for teaching purposes by analyzing pieces of written discourse done by experienced science writers as has been suggested in chapter five. This would help to enrich the students' repertoire of the scientific genre and increase their awareness of how scientific writing is constructed. Authentic material can be analyzed focussing on the grammatical, lexical and rhetorical conventions of scientific writing which are considered to be pivotal to the development of writers' abilities and in enabling them to meet the different expectations of their subject courses.

## 6.2 Implications for the Teaching of Writing

Based on the analysis in chapter four, it became clear that the skill of writing involves more than producing grammatical sentences. Writing is perceived as a functional process in that the writer has to attend to the functions of sentences and paragraphs within certain textual and contextual frames. In writing, each sentence functions as part of a developing skeleton for the following sentences by their relevance to the preceding sentences. The writer has to adhere to the contextual constraints as well as to the purpose involved in writing a certain piece of text.

In investigating the samples of text in chapter four, textual and contextual constrains have been attended to under five main categories: reference, conjunc-

tions, collocation, Theme/Rheme, and sentence relations. Although each of these has been analyzed separately, the particular text under investigation could not make sense unless it was considered as a whole, for it was difficult to overlook other items which contributed to the meaning of the discourse. Thus, those texts have been treated as *gestalts*, and not as separate, chunked sentences. Sentences had to be considered together to make a whole text since the meaning of the texts is codified within these sentences as a whole.

As a corollary, apprentice science writers need to take into consideration a multifunctional view in relation to writing, since writing is perceived as a unity of the different functional considerations: interpersonal, ideational, and textual. Therefore, it is important to raise students' awareness of the unity of these aspects that render a text more cohesive and coherent, as well as appropriate to the discourse community, and consequently more communicative.

It seems that, since students at JUST are novice writers as well as scientists, an exposure to authentic texts might be of great help. Therefore, in teaching research writing, authentic material for the teaching of the different sections of a piece of research is essential in order to ensure maximum comprehension of the different grammatical and rhetorical conventions unique to each section and how each section is constructed. In setting up the course design, considerations such as the learners need, subject clients expectations, approaches to the teaching of writing science research and considerations of time alloted for such a course, have all been taken into account.

The content of the course is based on the need of students at JUST to learn research writing and the dissatisfaction with the present course content. This dissatisfaction was expressed by various subject teachers and was passed on to the faculty and then to the English section. Subject teachers believe that it is important for their students to be able to write scientific research that is academically appropriate, cohesive as well as coherent. Consequently, and after having examined the sample texts in chapter 4, it seems that students' interest can be better met by exposing them to authentic material. An analysis of such material and decoding it to show students how experienced scientists and academics write

is of vital importance. Since these novice science writers are expected to meet such standards, then an emphasis on the conventions of scientific writing might be helpful in raising their awareness of the genre and its conventions as well as enabling them to use the language more communicatively. The material is also supposed to cater for the students' problems discussed in chapter 4.

In order for these learners to be able to communicate more effectively, a foundation of linguistic competence is equally important. Learners need to learn how grammar operates in each text type. A systematic exposure to the discourse grammar of the different sections of the research report is essential for aquiring an appropriate level of proficiency and improvement. Since the time allotted for such a course is three contact hours throughout the whole term, a decision had to be made on what would be the most important aspects of focus. Therefore an emphasis on the main sections of research report, the introduction, methods and materials, discussion and conclusion has been proposed using authentic material. These texts will be analyzed and a focus on the linguistic as well as the rhetorical conventions of each section will be emphasised. Students will be made aware of these linguistic and rhetorical uses that make up a piece of scientific research. This has been focussed by providing guided activities for the learners to analyze texts into their rhetorical components and then to produce a synthesis that reflects awareness and comprehension of how such texts can be constructed. The mechanics of writing, such as punctuation, capitalization, indentation, etc. have been taken into consideration.

Attention has been given to the importance of having a potential reader in mind while writing, since the success or the failure of any discourse depends so much on the reader's response. Team work and the use of *clinic hours* will be encouraged for its importance in providing comments from peers which will give a sense of reader response. Students will be encouraged to make up their own decisions in choosing a topic, modifying their plans and organization. They will be helped to become more independent and more autonomous writers.

## 6.3 Conclusions and Suggestions for Further Research

This research study has shown that an evaluative systemic functional view of students' written texts can effectively reflect their weaknesses and problems in writing scientific research. This analysis has provided more knowledge about the students' problems in handling their writing. An evaluative systemic analysis of written discourse has revealed useful concepts for differentiating between good and bad texts in terms of cohesion, reference, and reading intelligibility.

The investigation has revealed the importance of evaluating discourse as a whole and not as disconnected sentences. It has been noted that discourse can only be meaningful when it is viewed in context. The most prominent problematic areas in the sample texts that were investigated are: reference, conjunctions, collocation, Theme/Rheme, and sentence relation. These items were discussed in relation to their position in the text and an explanation of these problems was discussed. Possible reformulations of problematic texts were provided. It seems that one possible reason for these problems can be attributed to language interference, especially in the case of the use of reference (especially the use of the definite article *the*) since Arabic is characterized as being more *definitive* in comparison to English.

Another reason for such problems seems to be that students at JUST had little exposure to scientific text-type. The analysis has revealed that students lack a knowledge of the grammatical and rhetorical conventions of scientific writing. Another problem that the analysis has revealed is that these students reflect little knowledge of science topics. Therefore, there should be cooperation of both English teacher and subject teacher to ensure that compatable objectives of how and what will be taught in the English courses. It has been found that students need to learn how to translate the information they have using English structure, especially since some of the students' writings have revealed an *un-English* feel in their structure.

I believe that language teachers should be trained in how to teach EFL. Teacher training is important especially in a scientific environment. The different approaches to teaching EFL and the different methodologies that can help students achieve what is expected of them is of vital importance for language teachers to know how to impliment. This might be one of the reasons for studnets underachievement in writing research reports.

The findings in this modest study can be further researched. A follow-up of the students' performance in their subject courses will be important to make sure that this course is heading into the right direction, especially given that evaluation of any course should be perceived as an ongoing procedure. This evaluation will be important to discover the weaknesses and the strength of the course provided. An investigation of the appropriate use of scientific genre will be examined throughout the years by exploring students' wirting, and via the feedback provided by the subject teachers in the different departments. Richards [208] believes that a continual and an ongoing review of the students' progress is vital to ensure the suitability of the target learning needs.

This study will be the basis for developing a special course for the teaching of thesis writing for postgraduate students at JUST in the various departments that have already established postgraduate studies, such as in the departments of Public Health, Pharmacy, and Engineering, as a continuation and a follow-up of what has been offered in this course.

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